SCIENCE LIBRARY

48 #45

MAR 31 1930

15 Cents

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, MARCH 27, 1930 $6.00 a Year

ANN ARBOR MICH 39296-U-1-28-31

University of Michigan General Library

THE Moore Champion DERRICK

TUBULAR LEGS

OF COURSE

ARMORED INSIDE AND OUTSIDE

RELATIVE CARRYING CAPACITY OF STEEL SHAPES AS COLUMNS

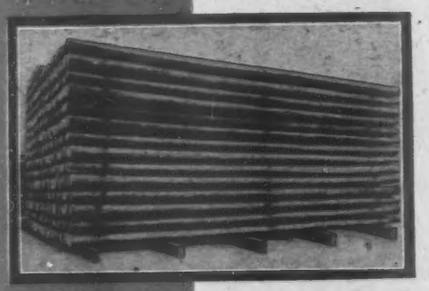
BASED ON 10 FT. LENGTH WEIGHING 10.5 LB. PER FOOT

Advertisers' Index on Page 33 Table of Contents on Page 34

WHY THEY LAST

Poles stacked uniformly on creosoted skids at the Beaumont Plant.

Poles being stacked for seasoning on the specially built seasoning yard at Texarkana.



A stock of International poles produced on order for one company.

LONG life of Poles is assured under ***International*** methods, because sound timber only is subjected to preservative treatment—a treatment which is under strict scientific supervision and control; a treatment which results in a deep and uniform impregnation by the highest grade of creosote oil. There is no gamble. The element of chance has been removed.

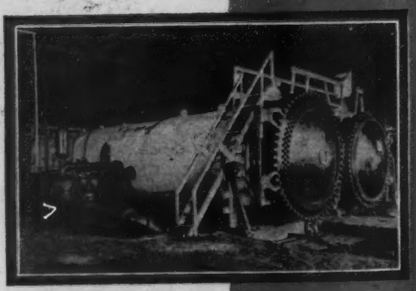
International Poles in service 30 years and still strong prove ***International*** methods.

Before you order poles—compare facts, for there is no substitute for experience.

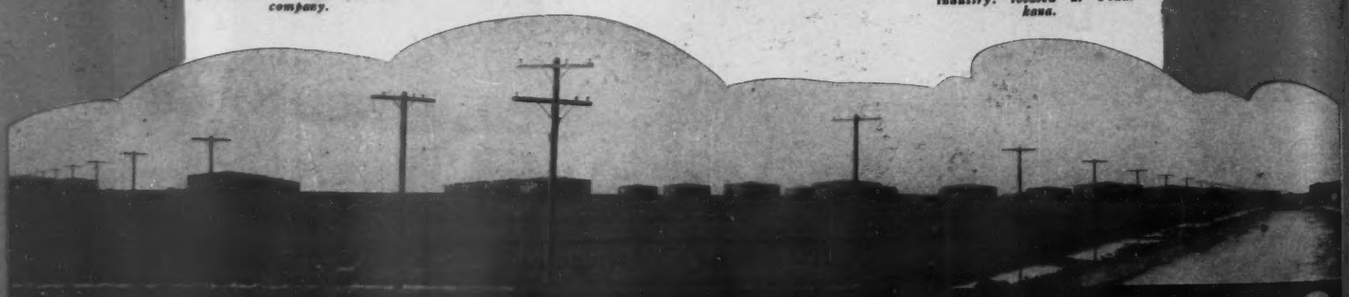
International Creosoting and Construction Co.
General Offices—Galveston, Texas
Plants: Texarkana Beaumont Galveston

Increment boring being taken to check the depth of penetration.

Graduate chemist making test on samples of creosote.



The two largest treating cylinders in the wood preserving industry: located at Texarkana.



International
Creosoted Yellow Pine Poles

Standards of the Oil INDUSTRY

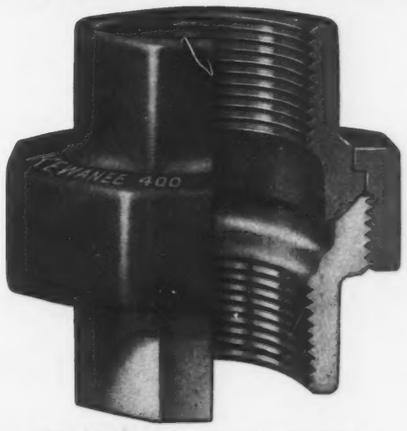
WALWORTH
VALVES
FITTINGS
AND TOOLS
for

OIL

KEWANEE FLANGE UNION

Available in all-iron for service in which fluids harmful to brass come in contact with the union.

NATIONAL HYDRAULIC UNION



KEWANEE "400" UNION

Available in all-steel for higher pressures and temperatures, and for service harmful to brass.

WALWORTH

Walworth Company, General Sales Offices: 60 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa.; and Attalla, Ala.
Walworth Company Limited, 620 Cathcart St., Montreal, P. Q.
Walworth International Co., 11 Broadway, New York, Foreign Representative

. . . Distributors in Principal Cities of the World . . .

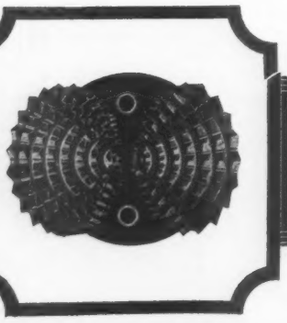
The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879.

Another SPENGLER Triumph

Patented

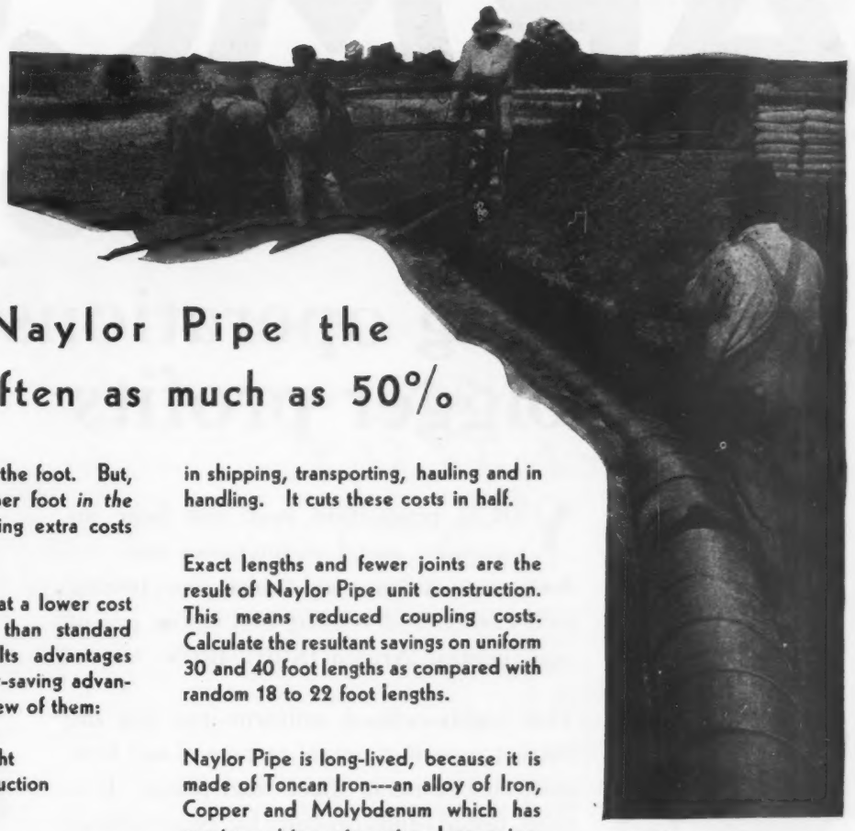
Now you are offered a superior ROCK BIT of SPENGLER heat-treated alloy steel that has attained new records in strenuous tests recently made in the Oklahoma City Field.

More hole in less time—because the dual water course construction provides a cleared surface for cutting, and assures less friction heat on the cones.



A. F. SPENGLER CO.
OKLAHOMA CITY, OKLAHOMA
SPENGLER PRODUCTS MEET A.P.I. SPECIFICATIONS

The *Real* Cost Of Pipe Is The Cost As *Laid*



...With Naylor Pipe the saving is often as much as 50%

PIPE is purchased by the foot. But, think of the cost per foot *in the ground.* Are you paying extra costs for laying?

Naylor Pipe can be laid at a lower cost per foot in the ground than standard weight wrought pipe. Its advantages are economical... money-saving advantages. Here are just a few of them:

1. Light Weight
2. Unit Construction
3. Long Life

No other pressure pipe is as light as Naylor Pipe. And light weight counts in shipping, transporting, hauling and in handling. It cuts these costs in half.

Exact lengths and fewer joints are the result of Naylor Pipe unit construction. This means reduced coupling costs. Calculate the resultant savings on uniform 30 and 40 foot lengths as compared with random 18 to 22 foot lengths.

Naylor Pipe is long-lived, because it is made of Toncan Iron---an alloy of Iron, Copper and Molybdenum which has greater resistance to rust and corrosion. Longer pipe life lowers maintenance costs.

Laying a 16 ' Naylor Pipe line for a prominent Oklahoma oil company

NAYLOR PIPE COMPANY, Main Office & Plant, 1230 E. 92nd St., CHICAGO

SALES OFFICES

25 Church St., New York
Witherspoon Bldg., Philadelphia
1209 First National Bank Bldg., Pittsburgh
507 Philtower Bldg., Tulsa
601 Post-Dispatch Bldg., Houston

DUCOMMUN CORPORATION
LOS ANGELES SAN FRANCISCO
Exclusive Distributors:
California, Arizona, Nevada and Utah

MONTREAL, CANADA
Mechanical Equipment Co.,
New Birks Building

TONCAN COPPER
Naylor Pipe
Maximum Structural Strength Mo-lyb-den-um With Minimum Weight
IRON

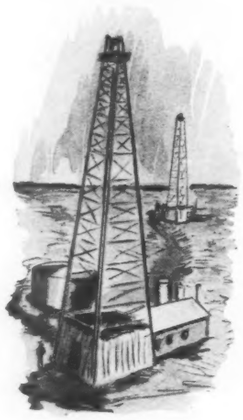
Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40' 0". Ends made to wrought pipe standards for all types of coupling.

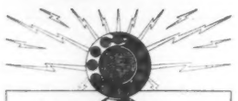
Where corrosion is not a problem, Naylor Pipe can be furnished in steel.

Toncan Copper Molybdenum Iron is a development of Central Alloy Steel Corporation, the world's largest and most highly specialized alloy steel producers. It possesses a superior corrosion resistance, making it the favored pipe material.

ARMCO INGOT IRON

...producing operations yield bigger profits



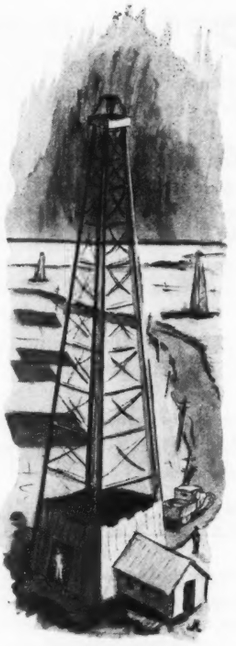


Hear the famous
ARMCO CONCERT BAND
every Tuesday night
WLW - 700 K. - Cincinnati
Ten to eleven E.S.T.

YOUR production need not bear an excessive metal maintenance tax. . . . Just see to it that your tanks, pipe, tubing, well casing, and roofing and siding are of rust-resisting Armco INGOT IRON.

This highly-refined, uniform iron has the longest record of *actual service* of any low-cost, rust-resisting sheets and plates. It is time-tested-and-proved, by twenty-three years of exacting performance.

How to reduce metal depreciation and increase profits by using durable sheets and plates—this an Armco development engineer will gladly explain. Write or wire the nearest office and appoint the time.



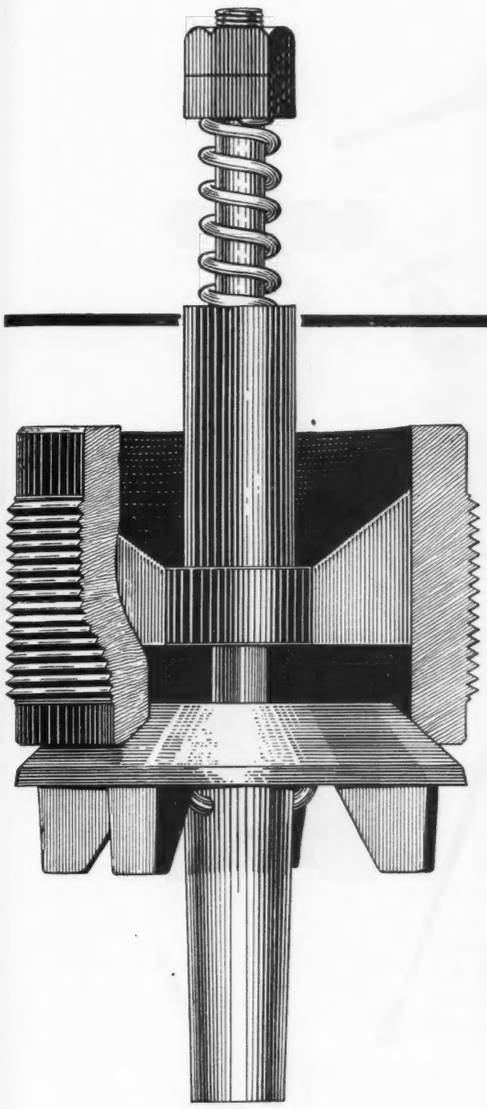
Back of this familiar symbol is nearly thirty years' experience in the manufacture of special analysis iron and steel sheets and plates. When you want a rust-resisting, low-cost metal be sure to see this triangle and the words, "Armco INGOT IRON." It is your assurance of dependable, economical service.

ARMCO

THE AMERICAN ROLLING MILL CO.
Executive Offices, Middletown, Ohio
Export: The ARMCO International Corporation

DISTRICT OFFICES: Chicago, Cincinnati, Cleveland, Detroit, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Tulsa, Houston

"BE SURE IT'S MADE OF ARMCO INGOT IRON"



The BAKER DRILL PIPE FLOAT VALVE ASSEMBLY

A drill pipe Float is only as good as its Valve Assembly. On the ability of this mechanism it "sinks or swims".

The cut-away view of the Baker Patented Drill Pipe Float Valve Assembly, here shown, will give a very good idea of the sturdiness of construction and the simplicity of the device.

This Patented Valve Assembly is the HEART of the Float, and is exclusively the product of BAKER. At the top may be seen the self-locking Drake nut; the steel tempered spring is controlled in action by the pipe sleeve, which may be set to open only the desired distance. This makes for longer life in the Valve Assembly.

Only materials suitable for the purpose are used. Note also bottom construction, preventing plugged string if valve should become detached, for any reason.

IT'S GOOD—IF IT'S "BAKER"

Detailed Information Will Be Mailed on Request

Mid-Continent Branches
Tulsa, Oklahoma Houston, Texas
Export Sales Office
25 Broadway, New York City

BAKER
OIL TOOLS, INC.
P. O. Box L, Huntington Park, Calif.
California Branches
Coalinga, Ventura, Taft, Bakersfield

Mid-Continent Distributors
B. & A. SPECIALTY CO.
220 E. Brady St., Tulsa, Okla.
2301 Commerce St., Houston, Tex.

Don't Use Cast-Iron Equipment — Cement is Stronger and Better

Stocks carried by Dealers in all active Mid-Continent fields.

They stand the Gaff

On Steam, Oil, Gas, Air, Water and Gasoline Lines.

Designed to withstand rough usage under most trying conditions, and to insure long-time, low-cost service, Lunkenheimer "King-clip" Gate Valves are particularly adapted to the service demanded of valves in the oil fields.

Here, men appraise equipment as they judge each other. Both must be exceptionally rugged, dependable, ready to go the limit—they must "stand the gaff."

That "King-clip" Gate Valves are meeting these rigid conditions is evidenced by the constantly increasing demand.

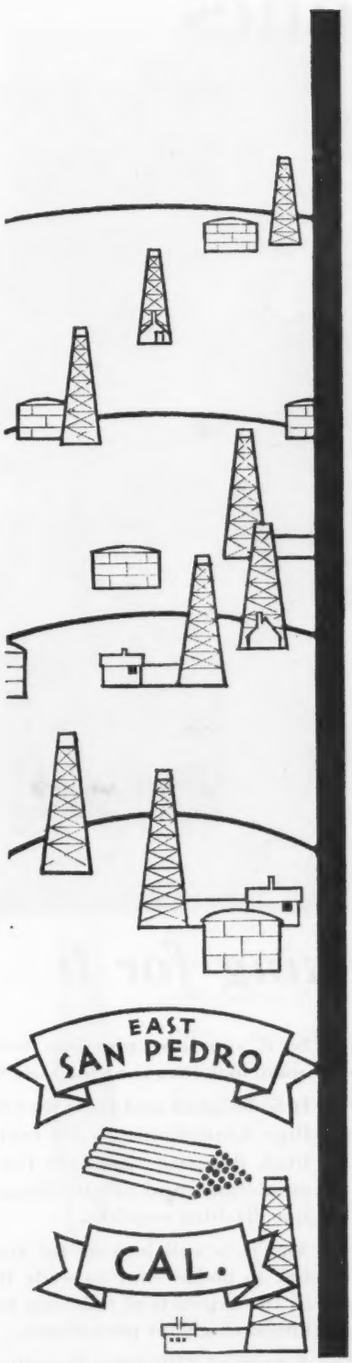
"King-clip" Gate Valves are made in sizes and for pressures as follows: Screw Ends, ¼ to 2 in.—150 lb. W. S. P., 225 lb. Gas, Liquid Pressure; 2½ to 4 in. — 125 lb. W. S. P., 175 lb. Gas, Liquid Pressure. Flange Ends, 1½ to 4 in.—125 lb. W. S. P., 175 lb. Gas, Liquid Pressure. They are also procurable in all-iron patterns for handling solutions which attack bronze but not iron.

Write for the "King-clip" booklet No. 504

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO BOSTON PHILADELPHIA
PITTSBURGH SAN FRANCISCO LONDON
EXPORT DEPT 318-322 HUDSON ST., NEW YORK

LUNKENHEIMER "KING-CLIP" GATE VALVES

5-27-21



Quick service from LOCAL STORAGE YARDS

WELL-STOCKED storage yards, conveniently located for quick service to the oil country, enable us to assure quick delivery of Pittsburgh Seamless Pipe and Casing at all times. Orders from the Mid-Continent and Gulf Coast fields are filled within twenty-four hours at our large pipe storage yard at Memphis, Tennessee. Fast service to the California fields is made possible through big stocks constantly maintained at East San Pedro.

To many customers on the Gulf and West Coast, Pittsburgh Seamless has come to mean "speed" as well as "service." We invite your hurry orders.

Pittsburgh Steel Products Co.
Division of
Pittsburgh Steel Co.
New York Tulsa Detroit Chicago
Pittsburgh St. Louis Houston

Pittsburgh P Seamless

DRILL PIPE CASING TUBING

3010

"They're Looking for Trouble" said the wise ones

Yes! and They're Still Looking for It

"They're just looking for trouble," said the wise ones, when Barber-Greene broke all traditions of ditcher design by building a machine with a vertical digging boom.

Today, five years later, Barber-Greene men are down in the oil fields, still looking for trouble—but with reverse English.

Wherever they find trouble they find another prospect for the Pipe Line Special.

For the digging superiority of its vertical boom and patented overload release, shows up in astonishing fashion on the digging that spells t-r-o-u-b-l-e for conventional machines.

For example: you'll find Barber-Greenes cutting through caliche, clay, and even coral rock and macadam pavements.

Such performance emphasizes, as words can never, the digging ability of the Barber-Greene—the digging ability that establishes new high daily footages and keeps the weekly mileages on the same high plane.

So if you have pipe-line trench to open, look into the Pipe Line Special.

It is designed and built for Oil-Field Pipe Line digging—for extremely high digging speeds — for pipe-straddling—and all the things pipe-line ditching requires.

And it is still looking for trouble—not to dodge—but to wade through in the interests of finishing your job and saving your pocketbook.

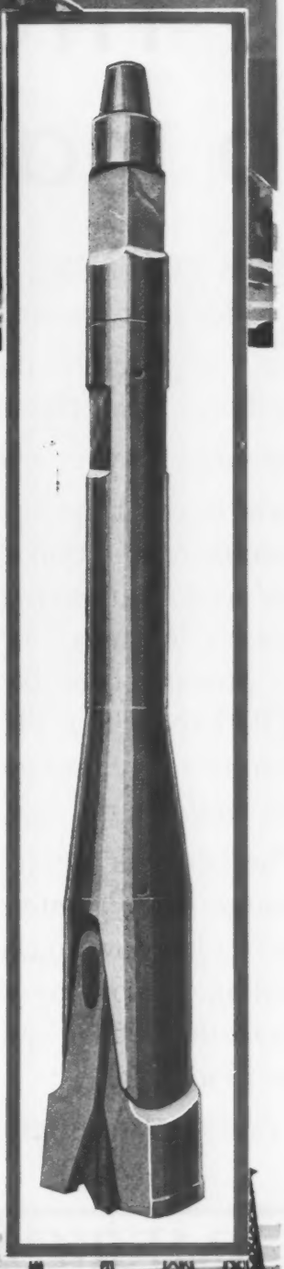
A copy of "Ditching Snapshots and Records" will tell you of the performance of this machine. Send for a copy today.

BARBER GREENE

STANDARDIZED MATERIAL HANDLING MACHINES

BARBER-GREENE COMPANY, 600 WEST PARK AVENUE, AURORA, ILLINOIS

PIPE LINE SPECIAL



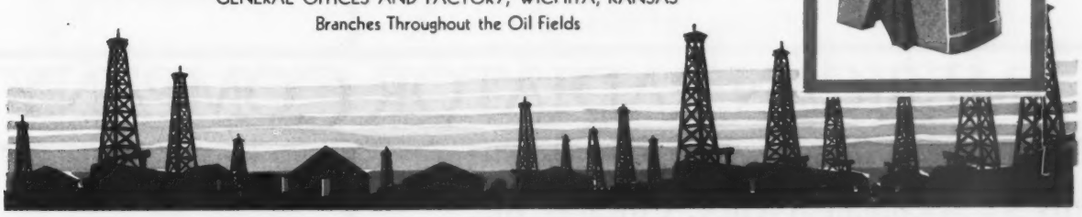
WHEREVER WELLS ARE DRILLED
"There You Will Find the SWAN!"

In the Caucasus mountains of Russia—at the foot of the Andes of South America—in the wilds of India—on the oil-fields of America—There you will find the SWAN!!

In the remote corners of the world, where delays are extremely costly, the driller must have the best. He can't afford to take chances. He must know his tools will stand the strain. He must have them when and where he needs them. Wise drillers everywhere know the SWAN meets the needs. That's why wherever wells are drilled you find the SWAN guarding the driller and standing the tests.

Both the Regular and the New Type SWAN under-reamer are carried in all of our branches, either for Sale or Rental purposes. Full information regarding BRIDGEPORT RENTAL SERVICE will be sent on request.

THE BRIDGEPORT MACHINE CO.
GENERAL OFFICES AND FACTORY, WICHITA, KANSAS
Branches Throughout the Oil Fields



NOW
is the time to make sure

ARE YOU SURE your condensers are ready for next summer?

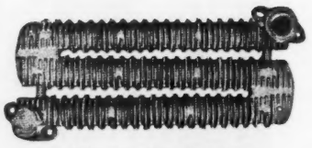
Are you sure the coils will be in first class condition when the rush season starts?

Are you sure your streams will be cool?

Now is the time to inspect all coils and replace or recondition them where necessary. Do you need additional surface to meet the coming season's demands? It can easily be installed in the present boxes because of the flexibility of STERLING SECTION construction which permits many variations—permits fitting the coil *needed* to the space *available.*

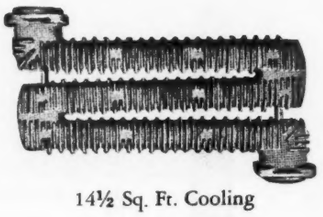
Whether it is to recondition an old coil, rearrange it for greater capacity or install a new one, let us show you how we can help you with Sterling Sections by giving ample capacity, easy installation and a quickly completed job built for a long life.

A card to our nearest office will do.



14 Sq. Ft. Condensing

20 Sq. Ft. Cooling



14½ Sq. Ft. Cooling

Sterling Bubble Cap

AMERICAN RADIATOR COMPANY

INDUSTRIAL DIVISION

816 So. Michigan Avenue, Chicago, Ill.

Factory at Springfield, Ill.

40 West 40th Street
New York City

935 Kennedy Building
Tulsa, Okla.

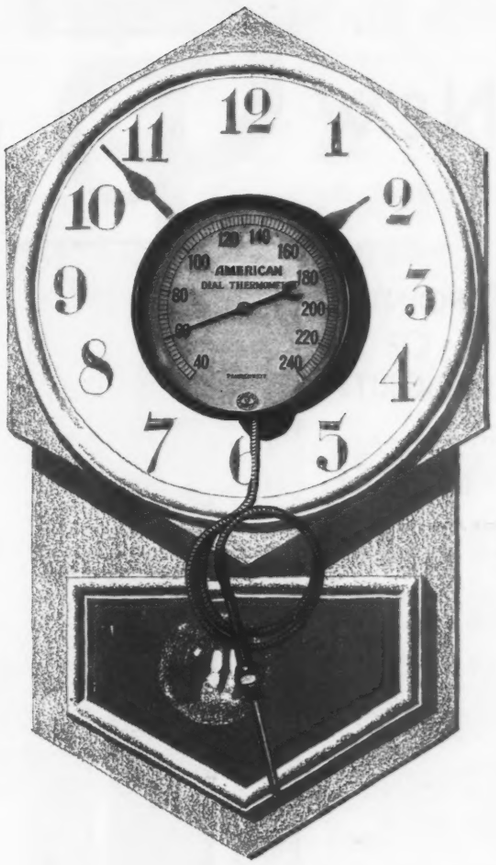
1214 Quinby Building
Los Angeles

4th and Townsend Streets
San Francisco

Sterling Oil Sections and accessories are also sold through the Branch Stores of the National Supply Co.

As EASY to read..

..as a CLOCK



IT is a simple matter to keep tabs on temperature when you employ American Dial Thermometers, for they overcome all the inconveniences associated with ordinary thermometer reading.

This is accomplished in two ways:

First: They bring the reading to you. You do not have to emulate Mohammed, who found that he had to go to the mountain because the mountain was immovable. The temperature may be read many feet from the point at which it is measured.

Second: The dial is as easy to read as a clock . . . and therefore may be read with great accuracy at a single glance.

American Dial Thermometers, mercury-actuated, with many types of interchangeable fittings, unkinkable tubing, and in various ranges from Minus 40° F. to Plus 800° F are not expensive . . .

Consolidated Ashcroft Hancock Co., Inc.
Bridgeport, Conn.
Subsidiary of Manning, Maxwell & Moore, Inc.

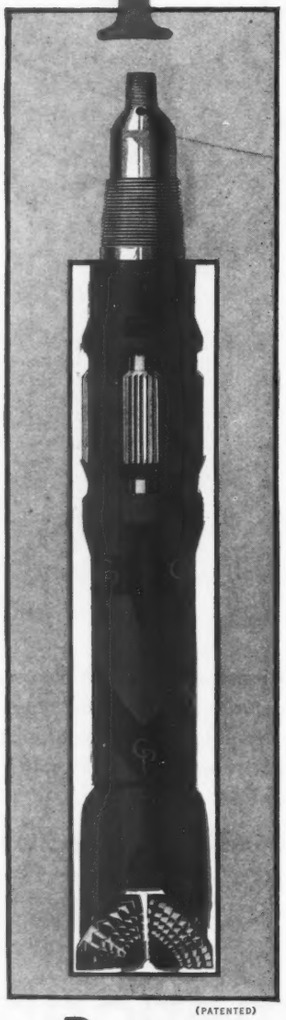
CONSOLIDATED ASHCROFT HANCOCK

American INSTRUMENTS

Specify Catalogs Desired:

American Dial Thermometers	G-5	American Recording Gauges	E-5	Ashcroft American Gauges	T-5
American Glass Thermometers	F-5	American Draft Gauges	B-5	Consol. American Safety Valves	Z-5
American Recording Thermometers	H-5	American Gauge Testers	D-5	Consol. American Relief Valves	V-5
American Quality Gauges	A-5	American Tachometers	J-5	Hancock Globe & Check Valves	X-5
American Temperature Controllers	R-5	Ashcroft Power Control Valves	M-5	Metropolitan Injectors	Y-5

With the NEW CP "Tucone" ROCK BIT



(PATENTED)

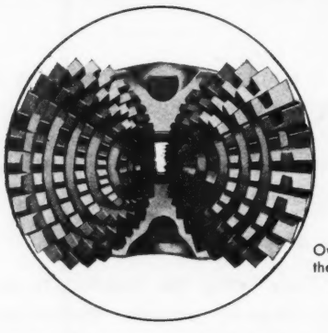
9 POINTS OF SUPERIORITY

1. SAFETY—Extra large drop-forged spindle bearings. No cone bushings. One-piece bit head. One-piece reamer body. FISHING ELIMINATED
2. CIRCULATION—Fluid stream jets directly on bottom of hole. No side-wall hydraulicking. STRAIGHT HOLE
3. CLEARANCE—Over 34% of hole area is clear. "Balling up" eliminated. STRAIGHT HOLE
4. CONES AND SPINDLE BEARINGS—Cones run on extra large replaceable drop-forged spindle bearings. Stronger and thicker cone wall section due to absence of bushing. GREATER STRENGTH
5. REAMERS—Three units, properly spaced and located for accurate reaming. New type reamer bearing eliminates wear on reamer body. KEEPS GAUGE — ALWAYS!
6. ONE-PIECE BODIES—Both bit and reamer bodies are solid manganese steel. GREATER STRENGTH
7. REPLACEMENTS—Cone-and-bearing units and reamers easily and quickly changed. TIME SAVED
8. LOW MAINTENANCE—Body repairs eliminated. No wear on bit head or reamer body. MONEY SAVED
9. CONE SERVICE—New CP "Red Head" cutting cones can be refitted on your used bearings (only at authorized CP Service Stations) and guaranteed by CP to be as good as if a new bearing were used—at a great saving to you! ECONOMY

CLEARANCE!

Over 34% of hole area is clear. "Balling up" is eliminated.

STRAIGHT HOLE!



Over 34% of the hole area is clear!

NOTE, in the illustration at the left, the amount of CLEARANCE, or OPEN HOLE (indicated by the white areas) between the gauge of the cutting cones and the largest diameter of the reamer body, which is formed by the reamer cutters. Note, too, in the above illustration, another view of this CLEARANCE—the amount of open hole formed by the bit body and the cutting cones as presented to the bottom of the hole! When you drill with a CP "Tucone" Rock Bit, OVER 34% OF THE HOLE AREA IS CLEAR—a feature that insures free circulation of the up-going fluid stream, cuts down the clogging of loosened formation, reduces friction and aids in the drilling of STRAIGHT HOLE!

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: Chicago Pneumatic Bldg., 6 East 44th St., New York

OIL TOOL DIVISION OFFICES:

OKLAHOMA CITY, OKLA. 655 Santa Fe Ave., LOS ANGELES, CAL.

KEEPS GAUGE ...ALWAYS!

OT-13

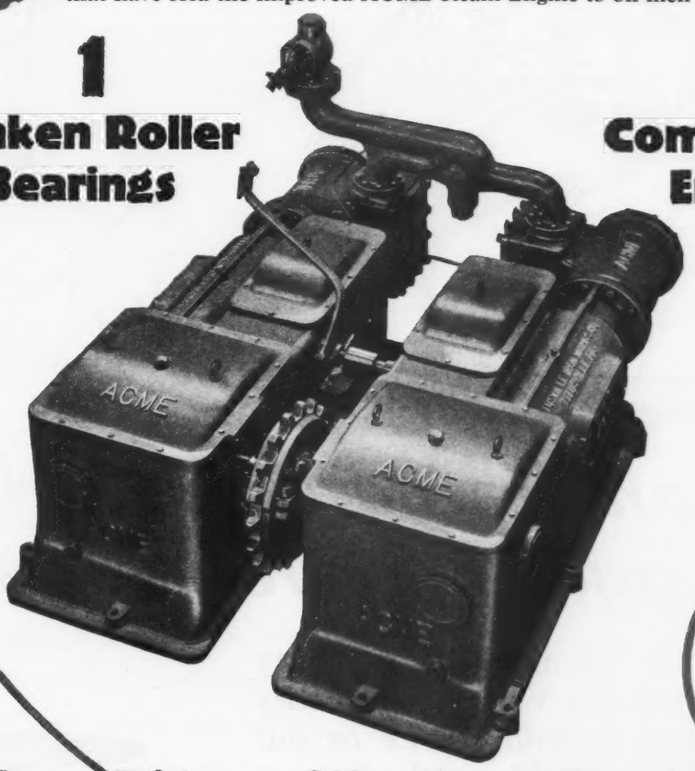
That the use of CP "Tucone" Rock Bits will unquestionably result in lower drilling costs, we are ready and willing to prove in any way YOU say! An inquiry to any of the above addresses will receive immediate attention.

3 reasons

that have sold the improved ACME Steam Engine to oil men all over the country.

1
Timken Roller Bearings

2
Completely Enclosed



TITUSVILLE OIL COUNTRY MACHINERY BUILT WITH RESERVE RUGGEDNESS

3
It's a Titusville Product

AND that third reason is the one that tells you that the improved ACME Roller-Bearing Twin-Cylinder Steam Engine has everything that you—as an oil man—could hope for in engine equipment.

The improved ACME Engine has been designed to give you more power and greater freedom from attention and maintenance costs—with its balanced crankshaft mounted on Timken Roller Bearings, its flood lubrication in a fully enclosed crankcase. Another notable improvement is the introduction of a two-piece main frame which permits the replacement of either half should accidental breakage occur.

Why not drop us a line and get the complete details? A post-card will do.

THE TITUSVILLE IRON WORKS COMPANY
Division of Struthers Wells-Titusville Corporation
TITUSVILLE, PA.

Mid-Continent Office
503 Exchange National Bank Building
Tulsa, Okla.

For Kansas, Oklahoma and Northwestern Texas
International Supply Company,
Tulsa, Okla.

For Export
American Steel Export Company, Inc.
535 Fifth Avenue
New York, N. Y.

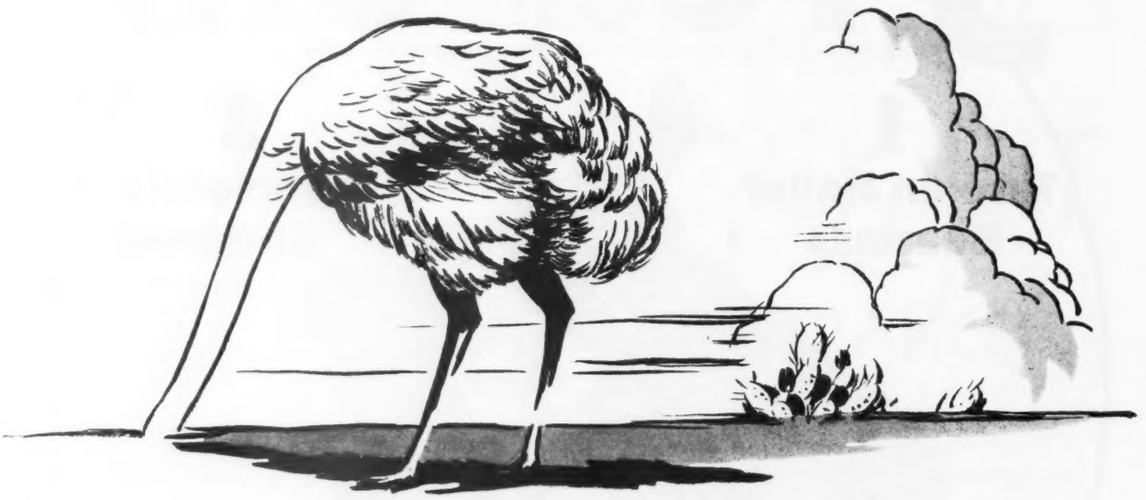
For California
California Machinery and Supply Company,
2449-55 Hunter St., Los Angeles, Calif.

For Texas, Louisiana, Arkansas and New Mexico
Mid-Continent Supply Company,
Fort Worth, Texas

TITUSVILLE
OIL FIELD EQUIPMENT
GAS ENGINES—PUMPS—BOILERS—DRILLING RIGS—STEAM ENGINES

TIW-42

You can't see what goes on beneath the surface–



but you can depend on a Darling valve for safe underground control

"Out of sight—out of mind." That's the way users feel about Darling Valves. When they are placed in underground service or out along the pipe lines the producers don't waste much time thinking about them because they don't have to. They can depend on Darling Valves to take care of themselves.

These valves are equipped with revolving disc gates. At every closing the disc seats in a different position distributing the wear and as a result giving an even tight closing and easy opening combined with long wear. Write for detailed literature concerning Darling Valves. You will value the information.

DARLING
GATE VALVES

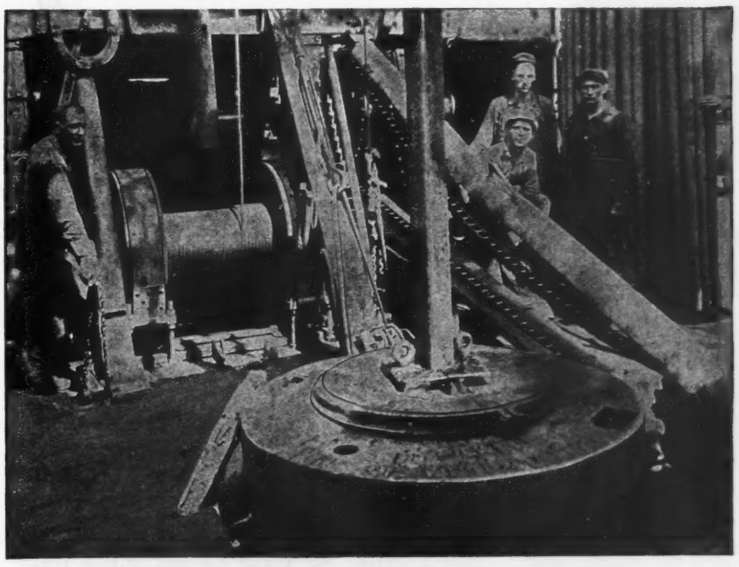
Darling Valve & Manufacturing Co., Williamsport, Pa.

NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

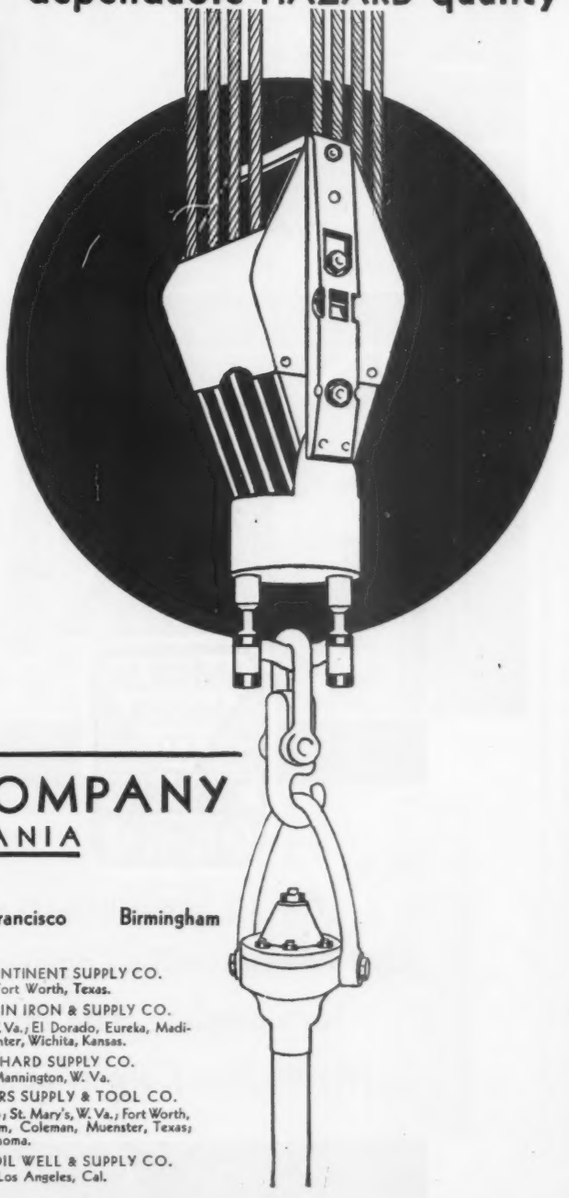
Mid-Continent Distributors:
Frick-Reid Supply Corp. Petroleum Supply Co.
International Supply Co.

Foreign Sales Manager:
H. M. Hein, Room 1405, 152 West 42nd St.,
New York

HAZARD



FLEX SET
ROTARY LINES
Pre-formed Wire Line of dependable HAZARD quality



PRE-FORMED rotary drilling lines—built by Hazard—with extra strength and flexibility to withstand constant bends without injury, are cutting rope costs on many rotary operations.

Let us send you complete information on the advantages of "Flex-Set", and other Hazard Wire lines for oil country usage.

Complete stocks carried at branches and distributors listed.

HAZARD WIRE LINE FOR EVERY SERVICE
- Drilling Lines
- Flex-Set Pre-formed Rotary Lines
- Casing Lines
- Sucker Rod Lines
- Sand and Mandrel Lines
- Wire Strand

HAZARD WIRE ROPE COMPANY
WILKES-BARRE PENNSYLVANIA

1625 South Troost Avenue, Tulsa, Okla.

New York Pittsburgh Chicago Denver Los Angeles San Francisco Birmingham

DISTRIBUTORS

BOVAIRD SUPPLY CO.
904 Mid-Continent Bldg., Tulsa, Okla.
Borger, Texas; Beggs, Maud, Sapulpa, Seminole, Tulsa, Oklahoma; Independence, Wichita Heights, Winfield, Kansas.

CAMERON TOOL & SUPPLY CO.
Cameron, W. Va.

CROTTY & CO.
Parkersburg, W. Va.

DANSER SUPPLY CO.
Weston, W. Va.

FORT WORTH WELL MACHINERY & SUPPLY CO.
Fort Worth, Texas.

GREAT NORTHERN TOOL & SUPPLY CO.
Billings, Mont.
Cody, Kemmerer, Wyoming; Kevin, Montana.

HOUSTON OIL FIELD MATERIAL CO., Inc.
Houston, Texas

LONGHART SUPPLY CO.
619 Petroleum Bldg., Fort Worth, Texas
Big Springs, Graham, McCamey, McLean, Pampa, Pyote, Ranger, Rankin, Santa Rita, Texas.

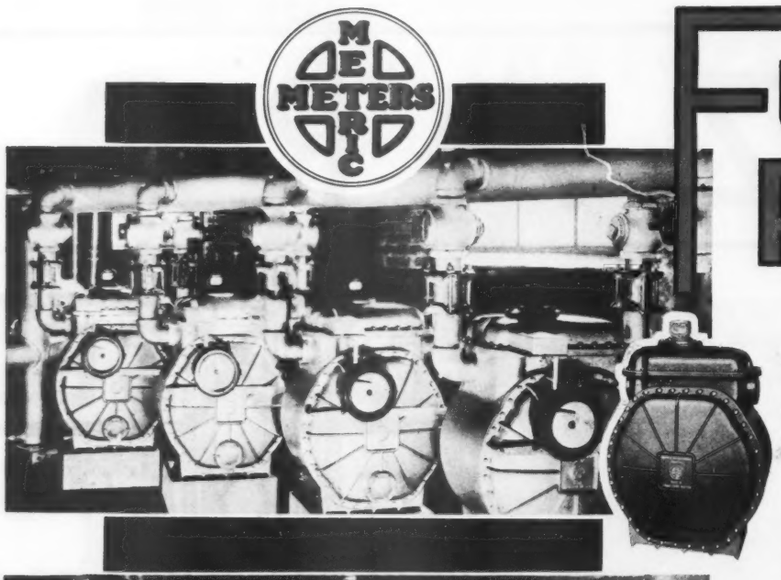
MID-CONTINENT SUPPLY CO.
Fort Worth, Texas.

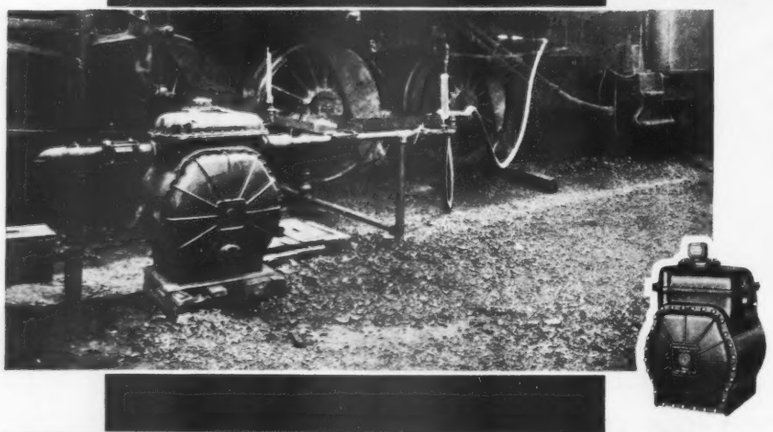
MOUNTAIN IRON & SUPPLY CO.
Parkersburg, W. Va.; El Dorado, Eureka, Madison, Valley Center, Wichita, Kansas.

PRICHARD SUPPLY CO.
Mannington, W. Va.

PRODUCERS SUPPLY & TOOL CO.
Marietta, Ohio; St. Mary's, W. Va.; Fort Worth, Olney, Graham, Coleman, Muenster, Texas; Bristow, Oklahoma.

UNITED OIL WELL & SUPPLY CO.
Los Angeles, Cal.





Fundamental Reliability

—that will BUILD your "Industrial" Sales

The appearance of Metric Iron Case Meters, in itself, wins the confidence of customers. Sturdiness, attractive lines, compactness . . . even the users of gas, who are unfamiliar with the scientific principles underlying gas meter construction, can appreciate these qualities.

But within the case . . . what? Although the customer may be impressed by the outside view, a Gas Company knows that meters must have a superior inside mechanism as well, if true records of gas consumption are to be obtained. It is precisely on this basis that Metric Iron Case Meters have established their reputation. They protect and satisfy both consumer and Gas Company by an operating precision and a sturdiness of construction that effectively meet modern demands for accuracy, flexibility, long life and attractive appearance.

A more highly developed part . . . a more advanced design . . . or an improved operation have, time after time, been introduced during the march of Iron Case Meter progress. Metric's work with Iron Case Meters has been dominantly conspicuous.

Metric developments . . . having run continuously since pioneering days . . . are the foundation of the gas engineer's confidence in the thorough reliability of Metric Iron Case Meters. Their up-to-date operating accuracy has won new friends, new customers, new business. To invest in Metric Meters is to invest wisely in the building of profitable industrial sales.

AMERICAN METER CO
MEASUREMENT ENGINEERS
CUBIC FEET

Write to headquarters of
Gas Measurement Engineering
for complete data on
Metric Iron Case Meters

METRIC METAL WORKS
ERIE, PENNSYLVANIA
IRONCASE, TINNED STEEL CASE and ORIFICE METERS

AMERICAN METER COMPANY
INCORPORATED
The World's Largest Manufacturers of Gas Meters and Allied Apparatus
ESTABLISHED 1836

SALES · ERIE DALLAS · TULSA · DENVER LOS ANGELES SAN FRANCISCO KANSAS CITY
SERVICE · PITTSBURGH CHICAGO · PHILADELPHIA NEW YORK BALTIMORE · BOSTON · ALBANY

BITURINE ENAMEL armors this pipe line against its enemy "CORROSION"

TODAY, scarcely a foot of steel pipe goes into the ground unless it is protected in some manner against corrosion. Stretching over the country in every direction are thousands of miles of pipe lines that have been covered with Biturine as armor against acids, alkalis and moisture. These thousands of miles of pipe lines are covered with Biturine because it has proved through years of effective service and competitive tests its ability to give practically 100% service under all conditions of soil and climate.

• • •

★INHIBURINE

This entirely new inhibitor with extraordinary anti-corrosive powers is now being incorporated into Biturine Primer whenever specified. Being solvent in bitumens it becomes an integral part of the priming coat and thereby functions as a second line of defense against corrosion should the Biturine Enamel Coating be penetrated.

Biturine is not to be confused with ordinary bituminous products. It is essentially different, and better. Its base is sulphur-free coke-oven pitch run to our own specifications, then blended with the utmost care at high temperatures with refined natural asphalts. Then the mixture is processed to produce a perfect chemical combination of the bitumens. The result is a coating that is impervious to water or moisture and proof against soil acids and alkalis. Corrosion hasn't a chance when pipe is protected with Biturine.

BITURINE COATINGS

Biturine Enamel — Biturine Enamel Primer★
Biturine Coupling Solution
Biturine Solution No. 5 — Biturine 70-80
★Biturine Enamel Primer and Biturine Solutions can be obtained with Inhiburine

We shall be glad to send you, on request, literature about Biturine Coatings, together with a list of satisfied users.

Get the Facts About the Newest Method of Pipe Protection

The most important development of the past twenty-five years in pipe-protection is the new Hill, Hubbell & Company method of mechanically coating and wrapping *pipe at the mill.* If you are contemplating laying new lines you should get the facts about this process now available for the production of six leading pipe mills. Biturine Coatings are particularly adapted for use with this process, but specifications are available covering a wide range of materials and combinations.

GENERAL PAINT CORPORATION

HILL, HUBBELL & COMPANY DIVISION

PAINTS VARNISHES LACQUERS

Specialists in the science of protective coatings for industry

Chicago, New York, Tulsa, Houston, Dallas, San Francisco, Oakland, Los Angeles, Portland, Seattle, Spokane

Export Offices: 11 Broadway, New York, N. Y., U. S. A.
160 Fremont Street, San Francisco, Calif., U. S. A.

Mighty Trucks *for the* Oil Country

Oil-country going isn't the sweetest in the world—it takes *mighty* trucks to get boilers, mud hogs, cable drums, rigging, line pipe, and what-not through bottomless mire and muck to location *on time*. Anyone who has driven trucks in the fields knows what a truck must have—owners of Internationals know these trucks stand the gaff and can't be beat for oil-field hauling.

It is significant that there are thousands of Internationals in the oil fields and that more of them are going into this service every day. It means that they have licked the oil-country going and are staying on the job the greatest number of working days.

International performance is matched by International service—Company-owned branches are scattered throughout the oil country—ready, with large stocks of parts and trained mechanics, for any emergency. No matter where Internationals are, at the home base or away, their owners are always assured of the same first-class service. Get acquainted with International Trucks now. They will do for you what they are doing for every owner.

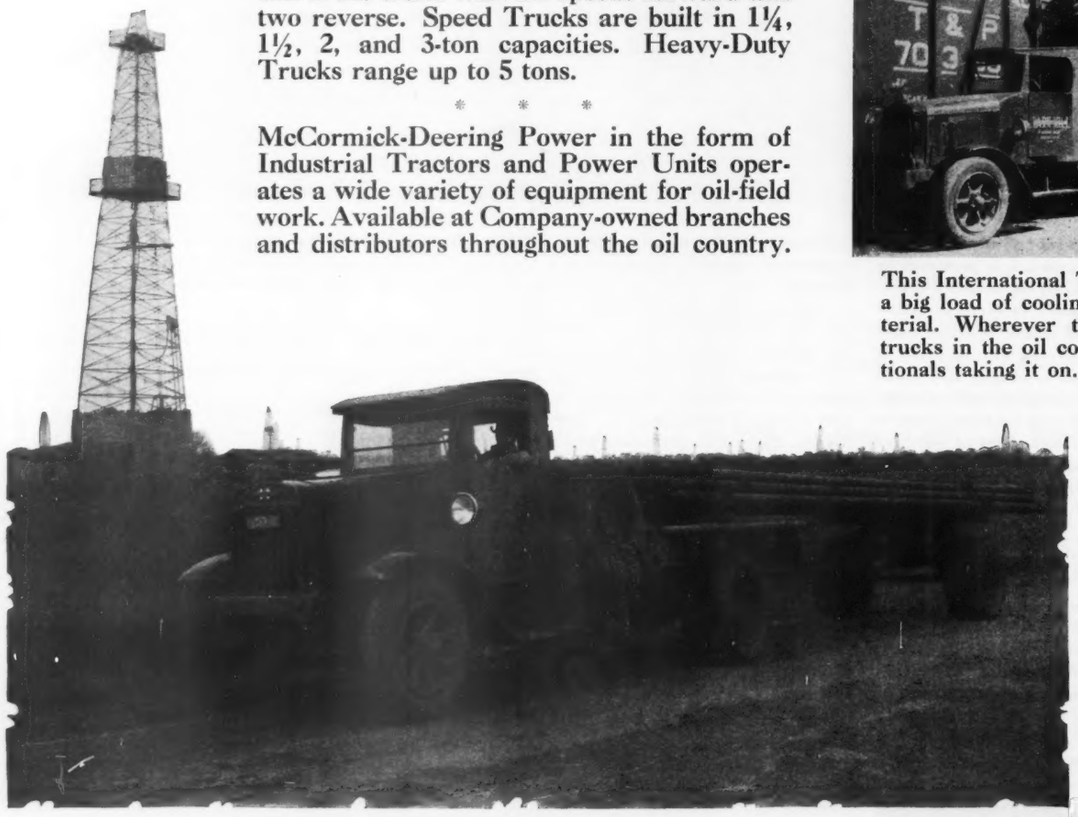
INTERNATIONAL HARVESTER COMPANY
OF AMERICA
(Incorporated)
606 So. Michigan Ave. Chicago, Illinois

There is an International Truck for every hauling requirement—from the lightest to the heaviest loads. The ¾-ton Special Delivery handles light loads. The 1-ton Six-Speed Special is the truck with six speeds forward and two reverse. Speed Trucks are built in 1¼, 1½, 2, and 3-ton capacities. Heavy-Duty Trucks range up to 5 tons.

* * *

McCormick-Deering Power in the form of Industrial Tractors and Power Units operates a wide variety of equipment for oil-field work. Available at Company-owned branches and distributors throughout the oil country.

This International Truck is ready to go with a big load of cooling tower construction material. Wherever there is heavy work for trucks in the oil country you'll find Internationals taking it on.



An International on the way to location with a load of pipe. International Trucks speed up operations for the oil industry because they get their loads through on time, roads or no roads.

The *Triple Diamond* emblem found on every International Truck is a symbol of *performance, economy and service*—the quality mark of the truck industry.

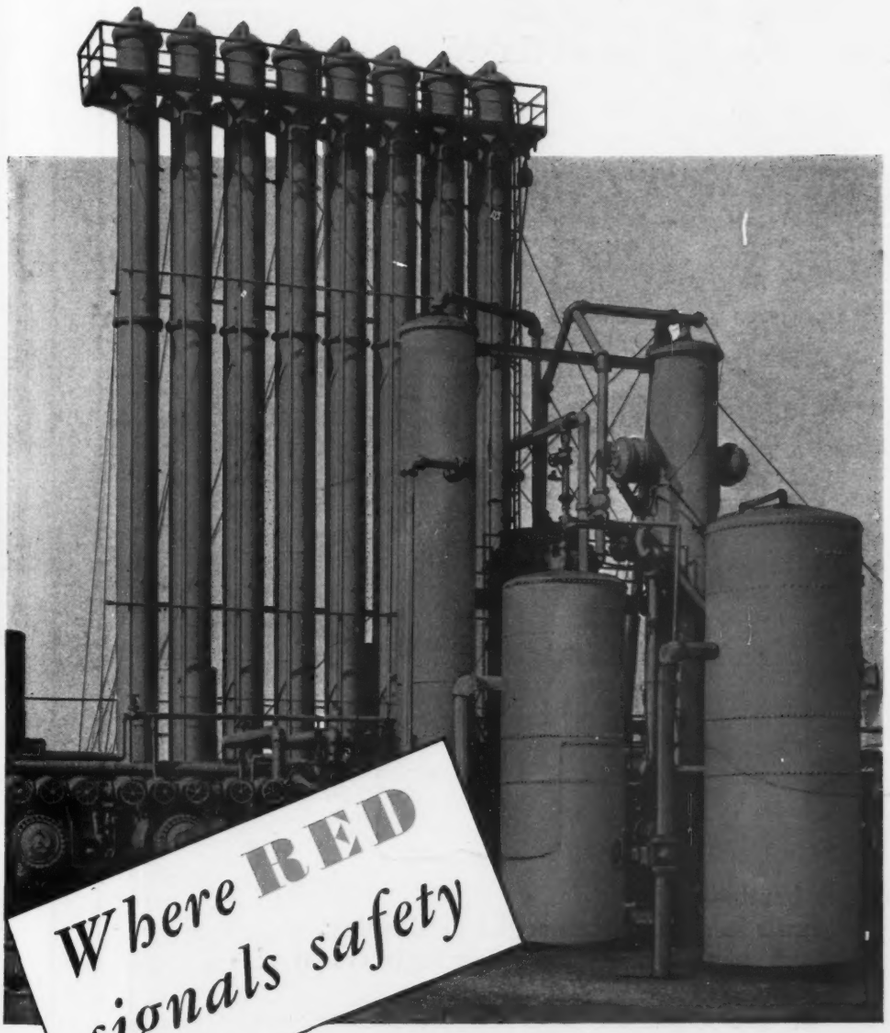
INTERNATIONAL

INTERNATIONAL TRUCKS

Worth Erecting...

worth Protecting *with*

DUTCH BOY RED LEAD



LITHARGE of correct physical character and extreme chemical purity is a necessity in oil-refining. Such litharge is made by the makers of Dutch Boy Red Lead and Dutch Boy White Lead. You can always rely on its unvarying uniformity. Our nearest warehouse can give you quick shipment.

NATIONAL LEAD COMPANY

New York, 111 Broadway; Buffalo, 116 Oak Street; Chicago, 900 West 18th Street; Cincinnati, 659 Freeman Avenue; Cleveland, 820 West Superior Avenue; St. Louis, 722 Chestnut Street; San Francisco, 235 Montgomery Street; Boston, National-Boston Lead Co., 800 Albany Street; Pittsburgh, National Lead & Oil Co. of Penna., 316 Fourth Avenue; Philadelphia, John T. Lewis & Bros. Co., Widener Building.

LARGE iron and steel structures exposed to the elements—agitators and tanks, for instance—present a problem to engineers and others responsible for their proper maintenance. The larger the investment, the greater the possible loss through depreciation and the greater the need for the best protection modern science can provide.

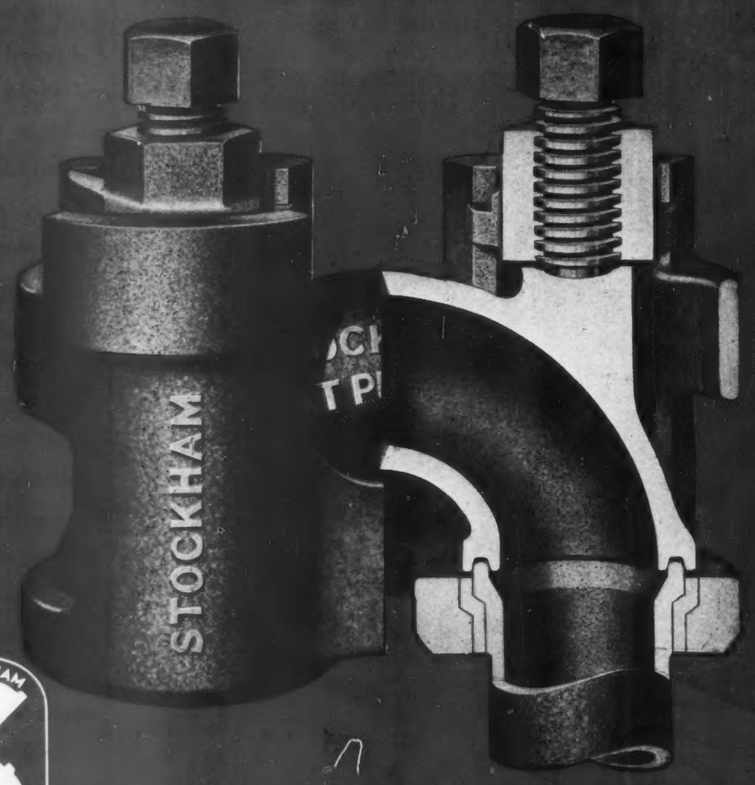
Pure red-lead paint is recognized as the most effective barrier to depreciation in metal structures. It adheres tenaciously to iron and steel surfaces. It *seals out* corrosion—prevents moisture and other destructive agents from getting at the metal.

By specifying Dutch Boy when purchasing red lead, you are assured of obtaining a fine, uniform, highly oxidized pigment—a paint material that has the endorsement of engineers and technical men in many industrial fields.

Dutch Boy Red Lead is available in two forms—paste and liquid. The latter—ready for the brush—is supplied in six colors—natural orange-red, light and dark brown, light and dark green, and black. The paste is available in natural orange-red and can be shaded to dark colors.

STOCKHAM
FANTZ-TYPE
RETURN BEND

exclusive features



STOCKHAM FITTINGS

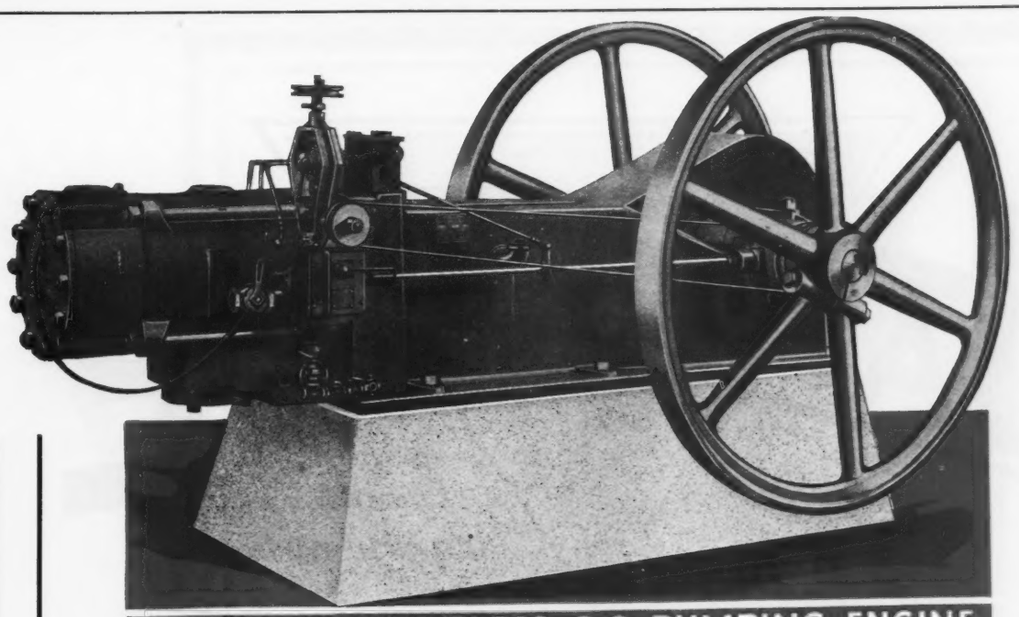
No other bend—
Permits such quick inspection or cleaning.
Allows such easy interchange or replacement of tubes.

Write our Petroleum Division for the facts about Stockham Fantz-Type Return Bends for your particular requirements.

There is a STOCKHAM FITTING *for Every Oil Requirement*
Electric Cast Steel
Cast Iron
Malleable

STOCKHAM PIPE & FITTINGS COMPANY
BIRMINGHAM, ALABAMA

Patents applied for in the United States and in Argentine, Canada, Colombia, Dutch East Indies, England, France, Germany, Holland, India, Italy, Japan, Mexico, Persia, Peru, Poland, Rumania, Trinidad, Venezuela, Australia, Dutch West Indies and Cuba.



FRANKLIN VALVELESS O.G. PUMPING ENGINE

A better pumping engine

The Franklin Valveless OG Pumping Engine was created to fill the demand for a *better* pumping engine. It has received an instantaneous and enthusiastic welcome. Fewer parts, because of exclusive Franklin design, plus a sturdiness and light weight that are Franklin qualities — and low fuel and oil consumption and bearings that are reversible and interchangeable—here's a better pumping engine — we have incorporated in it an advancement in design and construction that makes for long life—and low lifting costs.

Franklin Valveless Engine Company
Franklin, Pennsylvania
Distributed by

OIL WELL SUPPLY CO.

There's a Franklin Valveless Oil or Gas Engine for Every Oil Field Requirement . . . . . .

HAYSTELLITE

The cast tungsten carbide

FIELD TESTS

TELL THE STORY...

TRY IT!

HAYNES STELLITE COMPANY

Unit of Union Carbide UCC and Carbon Corporation

DISTRICT SALES OFFICES

Chicago—Carbide and Carbon Bldg.
Detroit—4-240 Gen'l Motors Bldg.
Los Angeles—1310 Santee Street
San Francisco—114 Sansome St.
Cleveland—628 Keith Bldg.
Houston—6119 Harrisburg Blvd.
New York—30 East 42nd Street
Tulsa—Exchange National Bank Bldg.

General Offices—Kokomo, Indiana

Haynes Stellite welding rod is also available from any of the 42 shipping points of Oxweld Acetylene Company

HAYNES STELLITE
HAYSTELLITE
HASCROME
HASTELLOY

HAYSTELLITE

Quality Products
Fair Prices
Engineering Service
Dependable Supply

Subsidiary of United States Steel Corporation

You Can Depend Upon

AMERICAN

STEEL & WIRE COMPANY

WIRE ROPES

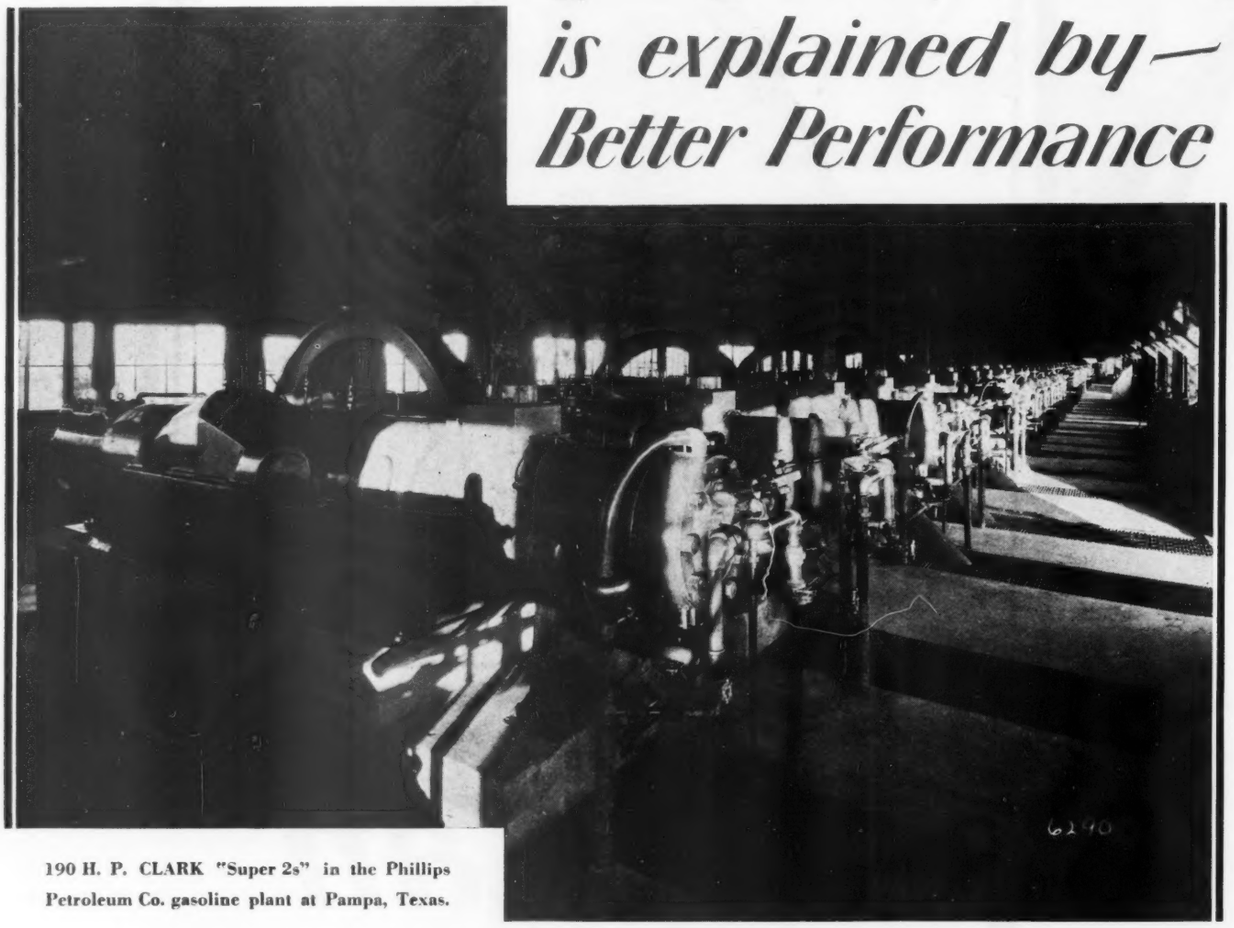
(ON THE YELLOW REELS)

STOCKS

CARRIED THROUGHOUT ALL OF THE OIL FIELDS

Super 2 popularity

is explained by— Better Performance



190 H. P. CLARK "Super 2s" in the Phillips Petroleum Co. gasoline plant at Pampa, Texas.

CLARK "SUPER 2s" —with the patented and exclusive CLARK Fuel Injector — are 2-cycle machines developed to the highest standards of performance ever attained by engines for oil field service. They give well nigh perfect running-time records. They operate on one-third less fuel than ordinary 2-cycle engines.

Thorough investigation of CLARK Super 2 performance will reveal to you the reason for the great and growing popularity of these machines.

Compressors and Gas Engines

CLARK BROS. COMPANY

OLEAN, NEW YORK

Export Office: 150 Broadway, New York City

Warehouses: Tulsa, Oklahoma; McCamey and Sweetwater, Texas; Artesia, New Mexico

California: Smith, Booth, Usher Company, 228 S. Central Ave., Los Angeles

Mid-Continent Sales Offices: Tulsa and Fort Worth

CLARK

Konset your cement

Konset—the cement maximizer and 5 in 1 oil field compound, is the only cement mixing compound so far as is known, proved by the tests of the Mexican Petroleum Department to combine the following five reactions in the one operation:

1. Accelerates the set of cement.
2. Increases the early and final strength.
3. Makes Portland cement waterproof, oilproof and acidproof.
4. Sets cement in oil, gas, salt or acid water.
5. Forms a permanent bond to the casing and anchors in the strata.

Konset saves 12 days per well or better, quickening the set of the cement and speeding up production. It permanently protects against chemical water and assures maximum production from each well. Okeyed by the Petroleum Departments of three governments. Saves time and assures better work anywhere cement is used around the lease, in engine foundations, tank bottoms, derrick feet, pipe lines, floors, etc. For special floor work, cement stucco or mortar, etc., order Colored Konset. Shipped in 5—30—50 gallon drums or in one gallon cans, 6 to the case.

SLUSH-MIX
The triple-action drilling product

Offered by the Sulco chemists as "The Improved lubricator, sealer and mud heavier". Of heavy specific gravity, remaining always in suspension. Carries the cuttings from the bit to the surface. Acts as a binder in any mud and readily soluble in water. Picks up and walls up sand, shale, etc. Prevents caving. For best results choose Slush-Mix. Liquid, paste and powder, 100 lb. bags and drums.

for "high-pressure" fields
HEF—T

Will control any gas pressure. Walls up holes in any formation.

for 5,000 ft. below
SULCO
concentrated
PASTE

Lubricates and waterproofs cement. Especially effective for deep drilling.

fills fissures
FISSURSEAL

Cements crevices, cracks, etc., restores lost circulation. Excellent for water shut-off and reconditioning wells.

KLEEN-A-WELL

Cleans tubing and rods, removes paraffine, asphaltum, gypsum or salt. Increases production.

GELITE

Rotary drilling mud—repays its low cost many times over.

SOLRITE

Boiler scale solvent.

KLEENITE

The world's best cleaner.

Other Sulco "Life Preservers"

Sulco time-savers and life preservers for the oil fields include Sulco Insulating Compound, Liquid Packing, Rustcotine, Pipe Line Coating, Acid-proof Cements, High Temperature Cement and Plastic Fire Brick, Fishing Acid, Colors for detecting underground waters, Graphite and Water-Tite Seal, Belt Dressing, Deflect-O-Lite Aluminum Paint and Powder, Iron Cement, Fireproof Paint, Derrick Paint, Boiler Paint, Tank Paint, Plastic Cements, Boiler Putty, Oilproof Coating, and Technical Paint and Varnish.

At any Supply Store or Lumber Yard

The SULLIVAN *Co.*

Memphis, U.S.A. — *Montreal, Canada*

Little Rock
Tulsa
Houston
Los Angeles

Salt Lake City
Charleston, W. Va.

Export Office:
30 Church St.,
New York City

General Offices, The SULLIVAN Co.,
Memphis, Tenn. Dept. OG-3.
You may send, without cost or obligation of any kind, information on the following products:

.....

.....

Name .....

Company .....

Address .....

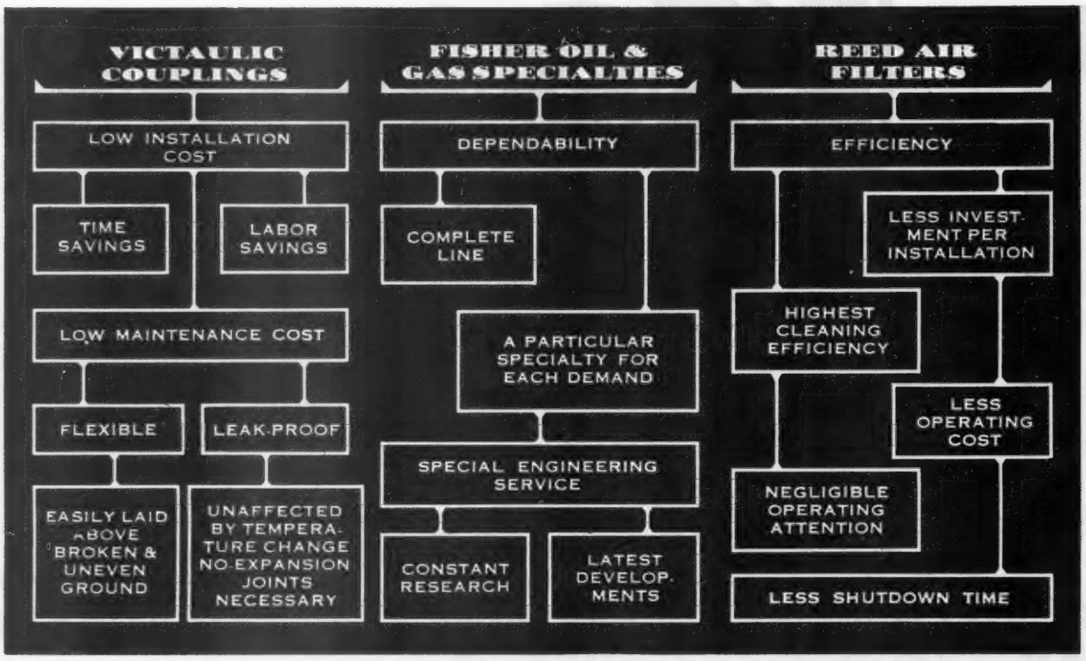


Chart your 1930 operations with these 3 guides to lower operating costs and greater efficiency . . . .

FISHER
Dependable Oil and Gas Specialties
VICTAULIC
For Every Joint In Every Line
Reed Air
filters ALL METAL
Reed Air Is CLEAN Air

The engineering skill and experience which are built into Fisher Specialties have made them the logical choice for handling some of the Oil and Gas Industry's most difficult control and regulating problems. There is a Fisher Specialty for every lease, plant and refinery need.

VICTAULIC COUPLINGS in a few short years have definitely established the fact that they are the most efficient and economical coupling "for every joint on every line" by saving thousands of dollars for users in installation time and labor, and maintenance costs.

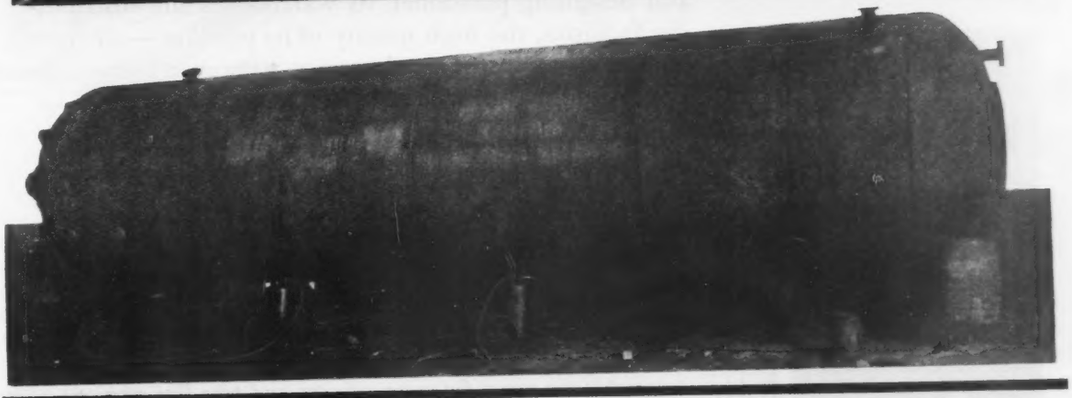
REED AIR FILTERS keep engines and compressors at peak operating efficiency by eliminating 95% of the cause of shutdowns and repairs. A single overhaul job would more than pay for the cost of a Reed Air Filter installation that would insure continuous, uninterrupted service.

We shall be glad to send you some interesting cost figures on Victaulic, Fisher, and Reed installation.

HANLON-WATERS
INC.
General Offices: TULSA, OKLA. *Box 1404*
HOUSTON — FORT WORTH — DENVER

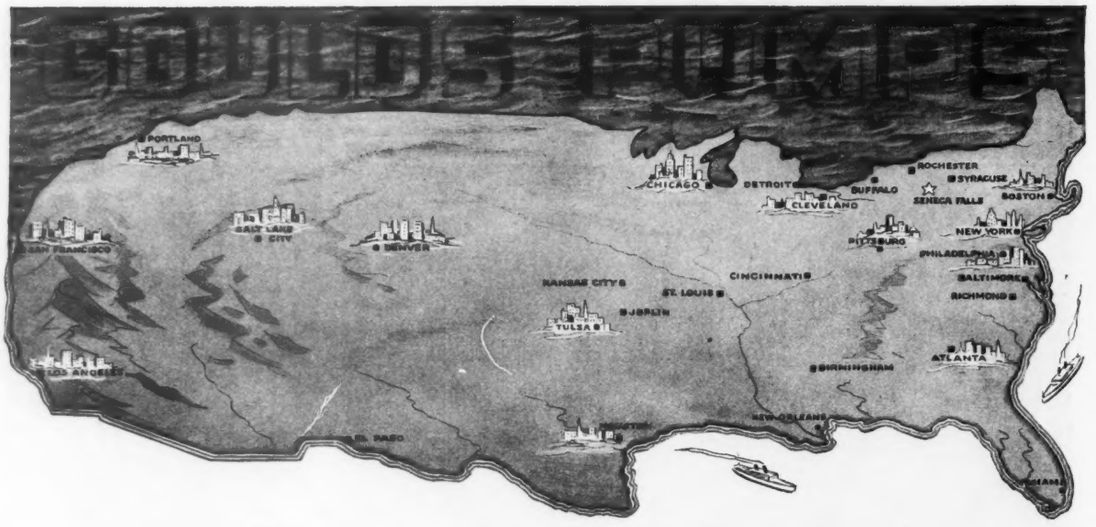
CRACKING · VESSELS

for . . . .
HIGH . . .
PRESSURE . .
HIGH . . .
TEMPERATURE
OPERATIONS



P.I.W. TANKS

The PETROLEUM IRON WORKS COMPANY
SHARON, PA.
NEW YORK CHICAGO TULSA



Representatives Everywhere...

FROM coast to coast, in every oil field and refining center, Goulds service facilitates the solution of pumping problems. A wide-flung organization with factory branches, warehouses, or representatives in every principal city in the United States, is always ready to serve you—to help you select pumping equipment exactly suited to your particular need.

For 82 years, Goulds has been building dependable pumps. Its many years of experience, its engineering and designing personnel, its warehouses and distributing facilities, the high quality of its product—all combine to give unsurpassed service wherever and whenever a pump is needed.

Goulds representatives are trained engineers, experts in the solution of pumping problems.

For complete information on any pumping problem, write or call the Goulds agent in your city, the nearest office, or the main office.

GOULDS PUMPS, INC., Seneca Falls, N. Y.

BRANCHES:

*BOSTON
194 Congress St.

PITTSBURGH
636 Henry W. Oliver Bldg.

**Branch Warehouses*

HOUSTON
1902 Second National Bank Bldg.

*NEW YORK
16 Murray St.
19 Park Pl.

*CHICAGO
12-14 So. Clinton St.

*TULSA
213 E. Archer St.

*PHILADELPHIA
111 North Third St.

ATLANTA
Citizens & Southern Bank Building

CLEVELAND
Union Trust Building

The GOULDS *Line*
includes a pump for every refinery and pipe line service

A. Centrifugal Pumps
Single- and Multi-Stage
Open- and Closed-Impeller
Sleeve- and Ball-Bearing
Sump Pumps
Paper Stock and Sewage Pumps
[Fire Pumps]

B. Rotary Pumps
Hand and Power

C. Triplex Pumps
Vertical and Horizontal
Low, Medium and High Pressures

with PUMPS FOR EVERY PURPOSE

"Buffalo"

THE ANNOUNCEMENT THE OIL INDUSTRY HAS BEEN WAITING FOR

Gas-Gasoline-Oil-Engine DRILLING UNITS

4 CYL.	6¾"x9"	80 H. P.
6 CYL.	5⅞"x7"	125 H. P.

The announcement of the NEW BUFFALO ENGINES will, we believe, take first rank among the most important statements reaching the oil industry in 1930.

The experience and resources of the BUFFALO GASOLENE MOTOR COMPANY, who have pioneered in the internal combustion engine field, makes it possible to produce a dependable new engine.

The NEW BUFFALO ENGINE brings you gasoline engine dependability with Diesel engine economy, but free from their troubles, burning low-grade fuels that can be purchased throughout the country, gas — gasoline — kerosene — distillate — alcohol and light fuel oils. This means a big saving in your fuel bill.

They do not require the services of an expert operator.

Full information upon request.

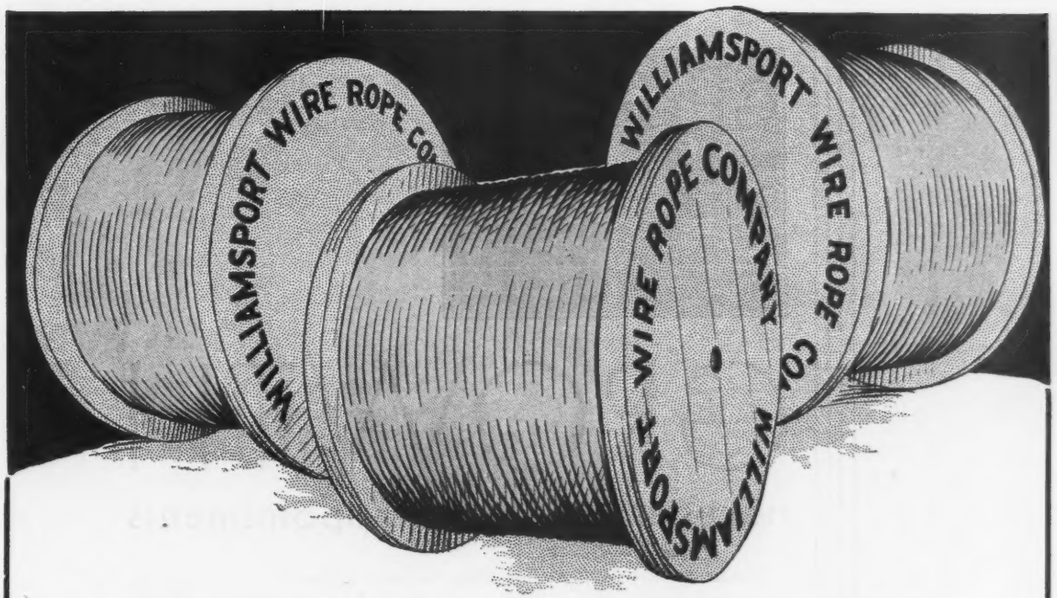
BUFFALO GASOLENE MOTOR COMPANY
Buffalo, New York

Vogt
Riveted Vessels
For High Temperatures & Pressures

Write for Information

HENRY VOGT MACHINE CO.
(Incorporated)
LOUISVILLE, KY.
New York Chicago Cleveland Dallas Philadelphia

Manufacturers of
OIL REFINERY EQUIPMENT, DROP FORGED STEEL VALVES AND FITTINGS, WATER TUBE AND HORIZONTAL RETURN TUBULAR BOILERS, ICE MAKING AND REFRIGERATING MACHINERY



When you need WIRE LINES you want them QUICK!

That's why every prominent distributing point has ready for you a stock of

WILLIAMSPORT
Telfax Tape Marked, Factory Certified
WIRE LINES

There are many operations, however, that cannot afford to be down at all.

To prevent this the user keeps spare reels of lines on hand, made by Williamsport. It is the preferred wire line because the man on the job can check its grade by the positive Telfax proof built in at the factory, and because of its uniformly superior quality.

WILLIAMSPORT PURPLE STRANDS

are the strongest lines and are used wherever the highest Tensile Strength is required.

If you want a good line of highest Tensile Strength — try *PURPLE STRAND.*

WILLIAMSPORT WIRE ROPE COMPANY

Main Office and Works: Williamsport, Pa.

General Sales Offices: 122 S. Michigan Ave., Chicago, Ill.

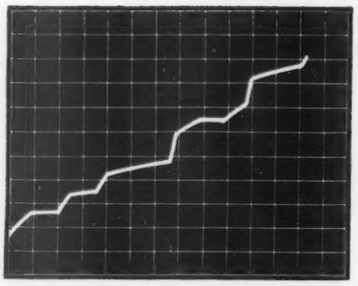
Oil Country Sales Offices: Williamsport Bldg., Fourth and Midland Valley Tracks, Tulsa, Okla.

Our Own Warehouses:

Ardmore, Okla.; Arkansas City, Kan.; Blackwell, Okla.; Borger, Texas; Casper, Wyo.; Electra, Texas; Houston, Texas; Hobbs, N. Mex.; Lewistown, Mont.; Maud, Okla.; Oklahoma City, Okla.; Odessa, Texas; Pampa, Texas; Seminole, Okla.; Shidler, Oklahoma.; Shreveport, La.; Smackover, Ark.; San Antonio, Texas; Tulsa, Okla.; Wink, Texas; Wichita Falls, Texas.

Distributed by the Bridgeport Machine Company, Wichita, Kansas, and all of their Mid-Continent Branches.

The Largest Exclusive Wire Rope Plant in America



GROWTH

necessitated these appointments

Broadened services, enlarged shop facilities and increased business have characterized Midwest from year to year. To aid in the continuation of this growth and development, the following additions have been made to the Midwest organization:

• • WALTER SIEGERIST

was appointed Assistant to the President on March 15th, with headquarters at the St. Louis office. Mr. Siegerist was formerly Assistant General Sales Manager for Combustion Engineering Corporation. He came to Combustion from the Heine Boiler Company.

• • IVAN S. FORDE

was appointed Eastern Sales Manager on March 1st; he is under the direction of E. A. Kerbey, Manager of the Ballwood Division, and has headquarters in the New York office. For the past several years, Mr. Forde was Manager of the Stoker Division of Combustion Engineering Corporation.

• • •

We are sure that both Mr. Siegerist and Mr. Forde will be of material assistance in our efforts to make Midwest Piping Service even more valuable to users of fabricated piping.

OFFICES

NEW YORK
(Ballwood Division)
30 Church Street

ST. LOUIS
1450 South Second St.

CHICAGO
208 South La Salle St.

LOS ANGELES
520 Anderson Street

TULSA
805 Mayo Building

MIDWEST PIPING
& SUPPLY CO., Inc.
St. Louis, Missouri

THE GREATER MIDWEST PIPING SERVICE

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.
Air Preheater Corp., The
Ajax Iron Works
Alco Oil Tool Co.
Allegheny Steel Co.
Allen Air-Turbine Ventilator Co.
Allis-Chalmers Mfg. Co.
Allsteel Products Mfg. Co., The
Aluminum Co. of America
American Askania Corp. 129
American Asphalt Paint Co.
American Cable Co., Inc.
American Car & Foundry Co.
American Cast Iron Pipe Co.
American Fomon Co.
American Iron & Machine Works Co.
American La France & Foamite Corp.
American Meter Co. 16
American Radiator Co. 10
American Rolling Mill Co. 4
American Schaeffer & Budenburg Corp. 11
American Sheet and Tin Plate Co.
American Steel & Wire Co. 23
American Steel Works
American Telephone & Telegraph Co.
American Well Works 174
Anchor Post Fence Co.
Andrews Steel Co., The 171
Armstrong Brothers Tool Co. 174
Armstrong Machine Works
Athey Truss Wheel Co. 174
Axelson Mfg. Co., Ltd. 85
Ayer & Lord Tie Co. 172

B

Baash-Ross Tool Co.
Babcock & Wilcox Tube Co., The
Badger, E. B., & Sons Co.
Badgett Steam Lubricator Co. 164
Baker Oil Tools, Inc. 5
Baldwin Chain & Mfg. Co.
Barber-Greene Co. 8
Barco Mfg. Co.
Barnickel, Wm. S., & Co. 117
Barnsdall Refineries, Inc.
Barrett Co., The 73
Bartlett Hayward Co., The
Beaumont Iron Works Co., The
Bell Oil & Gas Co.
Bessemer Engine Co. 92-93
Bethlehem Steel Co. 158
Big Lake Oil Co.
Bignall & Keeler Machine Works 107
Birmingham Tank Co. 172
Blackor Co. 68
Black, Sivalls & Bryson, Inc. 65
Black Wire Rope Co.
Bosch, Robert, Magneto, Inc.
Braden Steel Corp.
Braun, C. F., & Co.
Brewster Co., The, Inc.
Bridgeport Machine Co. 9
Bristol Co., The
Broderick & Bascom Rope Co.
Brown, Arthur C. 183
Brown Instrument Co.
Brown-Straus Corp.
Buckeye Traction Ditcher Co. 163
Buda Co., The
Buffalo Gasolene Motor Co. 29
Burford Oil Co.
Burt Mfg. Co. 175
Butler Mfg. Co. 169
Byron Jackson Co. Back Cover

C

California Manufacturing & Engineering Co.
Cameron Tool & Supply Co.
Carey, The Philip Co.
Caterpillar Tractor Co.
Central Alloy Steel Corp. 95
Central Tube Co.
Chain Belt Co.
Champion Machine & Forging Co., The
Chaplin-Fulton Mfg. Co., The 168
Chapman Valve Mfg. Co., The
Chestnut & Smith Corp.
Chicago Bridge & Iron Works 83
Chicago Pneumatic Tool Co. 12
Cincinnati Advertising Products Co., The
Clark Brothers 24
Classified Wants 132-133-134
Cleveland Trencher Co., The
Climax Engineering Co. 54-55
Colona Mfg. Co.
Colorado School of Mines
Columbian Rope Co. 166
Columbus Forge & Iron Co., The 172
Consolidated Ashcroft Hancock Co., Inc. 11
Continental Supply Co., The 61
Cooke, C. Lee, Mfg. Co.
Cooper-Bessemer Corp., The 92-93
Cooper, C. & G. Co., The 92-93
Coppus Engineering Corp.
Corona Silica Inc.
Crane Co.
Crane Packing Co.

D

D. & B. Pump & Supply Co.
Darling Valve & Mfg. Co. 14
Dart, E. M., Mfg. Co.
Davis, G. M., Regulator Co.
Dayton-Dowd
Dayton Rubber Mfg. Co., The
Dearborn Chemical Co. 155
De Soto Foundry & Machine Co., Ltd. 63
Detroit Graphite Co.
Dixon Crucible Co., Joseph
Dodge Brothers Corp.
Doheny Stone Drill Co. 100-101
Donner Engineering Co.
Donovan Boiler Works, Inc.
Dow Chemical Co., The
Dresser & Gorton, Inc.

D

Dresser, S. R., Mfg. Co. 45
Driftmeter, Inc.
Du Pont de Nemours & Co., Inc. E. I.
Durametallic Corp. 126

E

Eagle-Picher Lead Co.
Economy Pump & Oil Tool Co., The
Edelblute Co., T. H.
Edward Valve & Manufacturing Co., The
Electric Machinery Mfg. Co.
Empire Oil & Refinery Co.
Emsco Derrick & Equipment Co.
Enduro Nirosta Steel Co.
Ethyl Gasoline Corp.
Exchange Banks of Tulsa

F

Fenwick-Reddaway Mfg. Co. 174
First National Bank & Trust Co., The
First National Bank & Trust Co. of Oklahoma City, The
Fisher Governor Co.
Fluor Corp., Ltd.
Fort Worth Steel & Machinery Co.
Fort Worth Well Machinery & Supply Co., Inc.
Foster-Wheeler Corp.
Four-Wheel Drive Auto Co., The
Foxboro Co., Inc., The
Franklin Valveless Engine Co. 21
Frates Co., The 123
Frick-Reid Supply Corp. 120
Fulton Iron Works Co.

G

G. & M. Co., Inc.
Gardner-Denver Co.
Garlock Packing Co.
Gaso Pump & Burner Mfg. Co. Inside Back Cover
General Electric Co.
General Paint Corp. 17
Gilbert & Barker Mfg. Co.
Goble, B. G.
Goodrich, B. F., Rubber Co., The
Goodyear Tire & Rubber Co. 111
Goslin Birmingham Mfg. Co., Inc.
Gott, H. P., Mfg. Co., Inc.
Goulds Pumps, Inc. 28
Granite City Steel Co.
Grant Oil Tool Co.
Graver Corp.
Gray Processes Corp., The 99
Greenspon's Joseph, Sons, Iron & Steel Co.
Griscom-Russell Co. 139
Guiberson Corp. 103
Gulf Refining Co. 162

H

Halliburton Oil Well Cementing Co. 71
Hanlon-Waters, Inc. 26
Harrisburg Pipe & Pipe Bending Co.
Haynes Stellite Co. 22
Hazard Wire Rope Co. 15
Heat Transfer Products, Inc.
Hedges-Walsh-Weidner Co., The
Heeter, Sons & Co., Inc., C. M.
Hercules Motors Corp.
Hercules Supply Co.
Hercules Tool Co.
Heydrick Mapping Co. 183
Hill, Hubbell & Co. 17
Hills-McCanna Co.
Hough, Charles N., Mfg. Co.
Hughes Tool Co. 97
Humble Oil & Refining Co. 160
Hussmann Hotel
Hyatt Roller Bearing Co. 91

I

Imperial Belting Co.
Imperial Refineries
Imperial Royalties Co.
Independent Oil & Gas Co.
Ingersoll-Rand Co. 51
International Cement Corp.
International Composition Co., Inc.
International Creosoting & Construction Co. Inside Front Cover
International Derrick & Equipment Co., The 66-67
International Harvester Co. of America. 18
International Nickel Co., Inc., The
International Supply Co.

J

Jackson Co., Byron Back Cover
Jackson Engineering Corp.
Jarecki Mfg. Co. 165
Jefferson Union Co.
Jenkins Bros.
Johns-Manville Corp.
Jones & Laughlin Steel Corp.
Jones, The S. M., Co. 108

K

Kellogg, M. W., Co., The 172
Kelly, John Eoghan
Kennedye-Plumb Corp.
Kennedy Valve Mfg. Co., The 175
Kerotest Mfg. Co.
Key Boiler Equipment Co.
Kingham Trailer Co., Inc.
Kirk-Morrow Iron Works, The 125
Kohler Co.
Koppers Co., The
K-W Ignition Corp., The

L

Landis Machine Co.
Larkin & Co.
Larkin Packer Co. 59
Layne & Bowler Co. 161

L

Leader Iron Works
Lees-Bradner Co.
Leschen, A., & Sons, Rope Co. 77
Leonard Construction Co.
Limbert & Co., Geo. B. 174
Lincoln Electric Co.
Linde Air Products Co.
Link Belt Co.
Longyear, E. J., Co. 127
Lorraine Corp., The 170
Lucey Products Corp.
Ludlow Valve Mfg. Co.
Ludlum Steel Co.
Lufkin Foundry & Machine Co., The
Lufkin Rule Co.
Lummus, The Walter E., Co.
Lunkenheimer Co. 6

Mc

McAlear Mfg. Co., The
McClintic-Marshall Co.
McCord Radiator & Mfg. Co. 155
McEverlast, Inc. 170
McEvoy, J. H., & Co.
McGregor Working Barrel Co.
McIntosh & Seymour Corp.
McKee, Arthur G., & Co.

M

MacClatchie Mfg. Co.
Macwhyte Co.
Madison-Kipp Corp.
Magnolia Petroleum Co.
Maloney Tank Mfg. Co. 118
Manzel Brothers Co.
Marion Machine Foundry & Supply Co.
Marley Co., The
Marsh Gauge Pole Co.
Martin-Decker Corp.
Mason Regulator Co.
Medart Co., The
Meicher, A. F. 174
Merco Nordstrom Valve Co.
Metric Metal Works 16
Midwest Piping & Supply Co., Inc. 32
Miller Combination Bailer & Pump Co. 159
Miller Improved Gas Engine Co.
Mine Safety Appliance Co.
Missouri Portland Cement Co.
Moon Mfg. Co., The
Moore, Lee C., & Co., Inc. Front Cover
Mooriane Co., The
Morris, I. P. & De La Vergne, Inc.
Muller Co., The John
Munn & Co. 183
Muskogee Iron Works
Myers, F. E., & Bro. Co. 183

N

National Equipment Corp.
National Lead Co. 19
National Petroleum Engineering Co. 183
National Supply Co. 57
National Tank Co.
National Tool & Metals, Inc.
National Transit Pump & Machine Co. 49
National Tube Co.
Natural Gas Equipment Co.
Naylor Pipe Co. 3
Neilan, Schumacher & Co.
Nitrose Co., The
Norris Bros., Inc.
North American Car Corp. 183
Northern Pump Co.
Novo Engine Co.
Nye Tool & Machine Works

O

Oakite Products Co. 175
O'Brien Steel Construction Co.
Ohio Injector Co., The
Oil Conservation Engineering Co., The
Oil Countries Specialties Mfg. Co., The
Oil Insurance Assn.
Oil Well Improvements Co.
Oil Well Supply Co. 77
Oklahoma Contracting Co.
Oklahoma Gas & Electric Co.
Oklahoma Portland Cement Co. 129
Oster Manufacturing Co., The
Oxweld Acetylene Co.

P

Page & Hill Co. 173
Panyity, L. S.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co. 105
Parmenter & Selby
Parsons Co., The
Patrick, R. S.
Patterson-Ballagh Corp. 80-81
Pattin Bros. Co.
Penberthy Injector Co. 47
Petroleum Engineering Corp.
Petroleum Equipment Co.
Petroleum Iron Works Co. 27
Pforzheimer, Carl H., & Co.
Phillips Petroleum Co.
Pittsburgh Equitable Meter Co.
Pittsburgh Screw & Bolt Corp.
Pittsburgh Steel Products Co. 7
Pittsburgh Valve, Foundry & Construction Co.
Podbielniak, W. J.
Pomona Pump Co.
Powell, William, Co.
Power Piping Co.
Prescott Co., The
Pressed Steel Car Co.
Prest-O-Lite Co., Inc., The
Protective Metals, Inc.
Public Service Co.
Pure Oil Co.
Pyle National Co.

R

Raigorodsky, P. M.
Reading Iron Co.
Reading Steel Casting Co., Inc.
Reece Wooden Sole Shoe Co., Inc.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Iron & Steel Co.
Republic Supply Co.
Robinson Orifice Fittings Co.
Ross-Meehan Foundries Co. 183
Ryerson, Joseph T., & Son, The 183

S

Safety Gas Main Stopper Co. 174
St. Louis Surfacer & Paint Co.
Schramm, Inc.
Selden Co., The
Shaffer Oil & Refining Co.
Shaw, S. F. 183
Sheldon Machinery Corp.
Shell Petroleum Corp.
Sherwin-Williams Co.
Shippers Car Line Corp.
Shreveport-El Dorado Pipe Line Co., Inc.
Sinclair Refining Co. 143
Sivyer Steel Casting Co.
Skelly Oil Co.
Smith, A. O., Corp.
Smith Engineering Co.
Smith Co., E. M.
Smith, H. C., Mfg. Co., Inc. 89
Smooth-On Mfg. Co.
South Chester Tube Co.
Southern Cornice Works
Southwestern Engineering Corp. 43
Southwest Welding & Mfg. Co.
Spang & Co.
Spang, Chalfant & Co., Inc.
Spengler Tool Co. 2
Springfield Wagon & Trailer Co.
Standard Power Equipment Corp.
Standard Steel Works
Star Drilling Machine Co.
Starrett Co., The L. S.
Steiner, George
Stockham Pipe & Fittings Co. 20
Stoody Co.
Stork Engineering Co. 166
Strong, Carlisle & Hammond Co., The
Strong Oil Tool Co.
Sullivan Co., The 25
Sullivan Machinery Co. 126
Sun Shipbuilding & Drydock Co.
Sureshot Torpedo Co.
Swedish American Prospecting Corp.

T

Taubman Supply Corp.
Taylor Instrument Companies 167
Templeton, Kenly & Co., Ltd.
Terry Steam Turbine Co., The
Texas Creosoting Co.
Texas Power & Light Co.
Timken Roller Bearing Co. 79
Titusville Iron Works Co., The 13
Toledo Pipe Threading Machine Co., The 157
Trackson Co.
Transcontinental Oil Co.
Trimont Mfg. Co.
Truman-Smith Construction Co.
Tube Turns, Inc.
Tulsa Boiler & Machinery Co.
Tulsa Chamber of Commerce 113
Tulsa Sheet Metal Co. 174
Twin Disc Clutch Co.

U

Union Carbide & Carbon Corp.
Union Mfg. Co.
Union Wire Rope Co.
Universal Engineering Co.
Universal Oil Products Co. 86-87

V

Vallez Rotary Filter Co.
Vez Co., The 119
Victaulic Co. of America 156
Victor Balata & Textile Belting Co.
Victor Welding Equipment Co.
Vogt, Henry, Machine Co. 30

W

Wagner Electric Corp.
Wailes, Dove-Hermiston Corp.
Wall Rope Works, Inc.
Walworth Co. 1
Warren Petroleum Co.
Washburne, Chester W. 183
Waukesha Motor Co.
Westco-Chippewa Pump Co.
Westcott Valve Co. 153
Western Gas Construction Co., The 176
Westinghouse Electric & Mfg. Co., The
West Texas Utilities Co.
White Co., The
Wickwire Spencer Steel Co.
Wico Electric Co.
Weimann-Kammerer-Wright, Inc.
Wilgus Mfg. Co., The
Williamette Ersted Co.
Williams Bros., Inc.
Williamsport Wire Rope Co. 31
Williams Tool Corp.
Wilson-Snyder Mfg. Corp.
Wilson Welder & Metal Co., The
Winkler-Koch Engineering Co., The
W-K-M Co., The
Wood Shovel & Tool Co., The
Worthington Pump & Mchy. Corp.
Wright Mfg. Co.
Wyatt Metal & Boiler Works

Y

Yale & Towne Mfg. Co. 116

Z

Zero Hour Torpedo Co., The
Zwetsch, Heinzelmann & Co.

The Oil and Gas Journal

PRODUCING REFINING ENGINEERING MARKETING

VOL. 28. NO. 45. TULSA, OKLAHOMA, MARCH 27, 1930

Copyright, 1930, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Conservative Policy Strengthened 35
By James McIntyre
Santa Fe Springs and Yates Pool operators help to solidify ranks of producers. Purchasers co-operate.

Line to Supply Kansas Gas to Omaha 37
By Neil Williams
May be extended to Des Moines and Minneapolis.

Court Names Gas-Oil Ratio Committee 38
By L. P. Stockman
Three members named by Judge Hazlett in Santa Fe Springs.

Liquefied Gas for California 38

Sidney Powers Heads A.A.P.G. 39
By Curtis Vinson
Elected at annual meeting in New Orleans.

Problem of Drainage at Kettleman Hills 40
By Stanley C. Herold
Theoretical mechanics of oil and gas wells.

Geophysical Methods of Prospecting 41
By H. W. Rose
Gravimetric system based on torsion balance described.

Properties of Automotive Lubricants 41
By H. C. Mougey
Design in motors and operating conditions reflected in quality.

James M. Guffey's Remarkable Career 42

Southern Louisiana Domes Reviewed 42
By E. R. Ames
Most of 50 revealed by geophysical exploration contain oil.

Volume and Value (Editorial) 44

New Unit Stabilizes Crude in Field 46
By W. T. Ziegenhain
Special grade of gasoline made in Oklahoma City Field.

Drastic Cuts in California 48
By L. P. Stockman

Pipe Line Construction News 72

Field Problems and Their Solution 90
Edited by Thomas F. Smiley

Bore Hole Surveying by Orientation 102
By R. P. McLaughlin
Equipment makes use of ordinary tubing or drill pipe.

Crooked Hole Problems on Gulf Coast 106
By P. C. Murphy and Sidney A. Judson
Straight hole practice lessens dry holes, lowers cost.

Crude Oil Inquiry in Tariff Bill 149
By Charles E. Kern

FIELD OPERATIONS

Late Fields 48

Oklahoma 50
By W. A. Spinney

Kansas 52
By W. A. Spinney

North Louisiana-Arkansas 53
By D. H. Bancroft

Southwest Texas 56
By B. D. Stevenson

Gulf Coast 58
By Neil Williams

Rocky Mountain Area 60
By Tolbert R. Ingram

Canada 60
By Victor Lauriston

California 62
By L. P. Stockman

Michigan 62
By Special Correspondent

West Texas 69-168
By L. E. Bredberg

North Texas and Panhandle 70-168
By L. E. Bredberg

East Central Texas 152
By L. E. Bredberg

Eastern Fields 78
By D. S. Wakenight

Kentucky-Tennessee 78
By Whit

Central West 82
By Whit

REFINING AND MARKETING

Additional Gains in Group 3 Market 36
By C. O. Willson
Oklahoma refinery gasoline, natural gasoline and kerosene prices higher. Minor changes in other products.

Technical Questions Answered 98
By Dr. C. K. Francis

Chicago Market Continues Upward 134
By J. B. Waldo

Eastern Market Expected to Advance 135
By A. E. Mockler

Natural Gasoline Manufacture 137

Brief Items for Petroleum Refiners 138

Refinery and Crude Prices 140-141

Tank Wagon Quotations 142

Of Interest to Sales Departments 154

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 33

Equipment and Supplies 84-88

Natural Gas Developments 94

Men Known in Oildom and Personals 96

Classified Want Advertisements 132-133-134

Detailed Field Operations in February 177

Crude Petroleum Statistics 184

Oil Securities Market 144-145

BE A REGULAR READER

The Oil and Gas Journal Tulsa, Okla.

Beginning at once, mail The Oil and Gas Journal to me every week for one year. Enclosed find $6.00.

I am engaged in the Division of the Petroleum Industry as checked below:

- ☐ Producing
- ☐ Refining
- ☐ Natural Gasoline Manufacturing
- ☐ Pipe Line
- ☐ Equipment

Name _____

Title _____

Company _____

Address _____

City _____

State _____

Refinery Section Starts on Page 134

Conservative Policy Strengthened

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Santa Fe Springs and Yates Pool Operators Help to Solidify Ranks of Producers. Purchasers Co-operate

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

By James McIntyre

While the crude oil production of the United States declined 43,601 barrels per day in the week ending March 22, a further decline this week is probable as California is expected to show an appreciable falling off because of a deeper curtailment of Santa Fe Springs production, and the West Texas area should show a decline by reason of the 20,000-barrel daily cut ordered in the Yates Pool.

Oklahoma's average was down to 615,240 barrels per day in the past week, which is 62,000 barrels per day lower than in the same week last year, and 36,000 barrels per day lower than the reported production the week ending March 15 of this year. A material increase in production is not expected in the State this week.

The production situation is better than it has been in many months, when the tremendous potential is considered. More Californians are co-operating—for which co-operation they received a substantial reward in the way of a price increase—and Yates Pool operators have shown a unanimous desire to bring production down to refinery requirements.

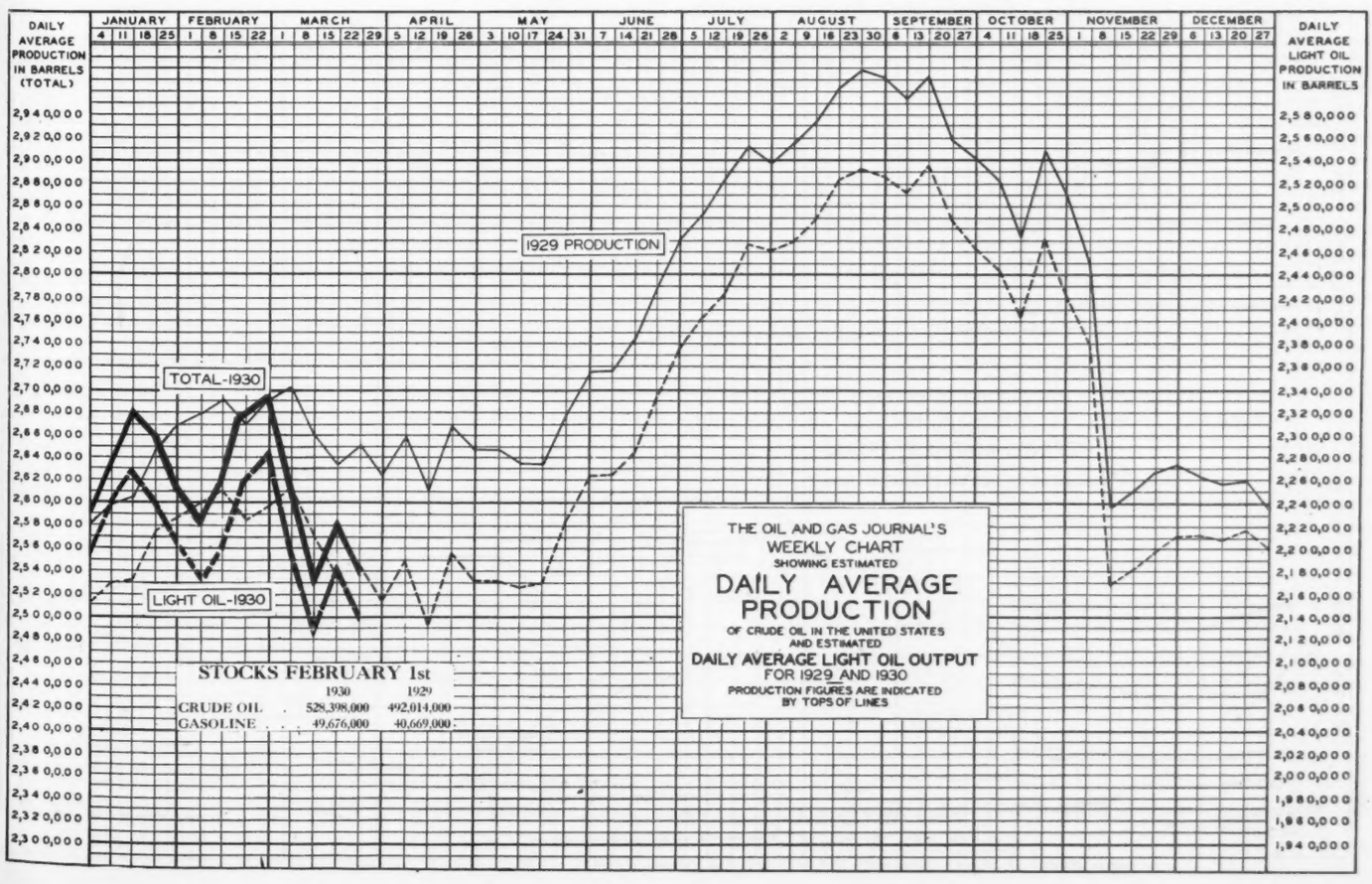
News from the fields covering the developments of the past week tells of big wells in different producing divisions, but, for the most part, in pools that are under curtailment and proration. They will not affect the current production situation. The Gulf Coast Field, where there is unrestricted development, saw two important salt dome pools extended with deep sand wells of relatively large production. In California a new light oil pool is believed to have been opened in Santa Barbara County by the completion of a well producing 45 gravity oil. The Darst Creek Pool in Guadalupe County, Texas, would be a market breaker if it were not for the conservative way it is being developed. It appears probable that this pool will have a potential production of 150,000 bbls. per day within a fortnight. It is the most prolific field yet found in the Southwest Texas territory. Kansas gives no cause for worry as operators there are, with few exceptions, heartily in sympathy with the prevailing producing policy.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended March 22 and a comparison with the previous week follows:

	Mar. 22		Mar. 15	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	64,025		85,095	
St. Louis-Pearson	40,960		44,280	
Seminole	222,355		237,470	
Northern Miscellaneous	233,310		228,710	
Southern Fields	54,590		55,690	
Total Oklahoma	615,240		651,245	
West Texas—				
Hendricks	88,545		90,735	
Yates	140,420		142,049	
Remainder	114,094		112,754	
Total West Texas	343,059		345,538	
North Louisiana	33,255	5,410	36,645	5,350
Arkansas	17,540	41,145	17,540	41,705
North Central Texas	132,835		122,153	
Texas Panhandle	93,645		91,508	
East Central Texas	25,712		25,871	
Kansas	116,870		116,210	
Total Mid-Continent Area	1,378,156	46,555	1,416,710	47,055
Gulf Coast		205,728		203,420
Southwest Texas		62,669		62,839
Eastern	133,000		134,000	
Rocky Mountain Area	74,598		74,833	
California—				
Santa Fe Springs	151,750		158,100	
Long Beach	104,100		104,200	
Huntington Beach	30,000		30,100	
Elwood	39,000		37,500	
Ventura Avenue	45,250		45,150	
Seal Beach	24,750		25,500	
Remainder of State	160,250	85,000	160,000	85,000
Total California	555,100	85,000	560,550	85,000
Total United States	2,140,854	399,952	2,186,093	398,314
Grand Total	2,540,806		2,584,407	

→ **Total Decrease, 43,601 Bbls.; Light Oil Decrease, 45,239 Bbls.** ←



Additional Gains in Group 3 Market

Oklahoma Refinery Gasoline, Natural Gasoline and Kerosene Prices Higher. Minor Changes in Other Products

By C. O. Willson

The price improvement in the Oklahoma (Group 3) gasoline and kerosene market which got under way the middle of March continued over the past week with indications of additional advances before the end of the month. All grades of refinery gasoline are at least one-fourth cent higher than they were a week ago and the kerosene grades have advanced one-eighth to one-fourth cent. Natural gasolines have also followed the trend in the refinery market.

The domestic demand for these products is improving. Preliminary negotiations between refiners and exporters indicated that large purchases of 390 and 375 endpoint grades for April delivery would be completed before the end of the week.

Fuel oils are not active although the price weakness appears to be limited to the high cold test grades or those containing free carbon so that they are not generally accepted as commercial grades for the northern markets. The weakness in distillate and gas oil which had been apparent since the first of the year was at least temporarily stopped. So many refiners have reduced their output of furnace oil distillates that buyers in many cases found the cheap material of a week and two weeks ago no longer available. The low cold test, low flash and straw color grades are not readily available for immediate shipment and several sellers who had been quoting a low of 3 cents advanced their prices one-eighth cent. The lowest quotations on gas oil continued but the price range was widened due to advances made by several refiners who had been quoting the top prices.

Sellers of bright stocks report a more active demand both on contracts and the spot market. There have been predictions that bright stock prices would be lowered early in the new year due to competitive conditions but several now feel that a large spring and summer demand for paraffin base lubricants will strengthen the market. The same situation applies to viscous neutral oils, particularly the higher viscosities. In this connection, a great deal depends on the price trends in Pennsylvania. Prices in that area where lubricants are the principal products slumped the latter part of last year and prices have not yet recovered. Pennsylvania refiners as a group have increased their output of steam refined stocks, bright stocks and neutral oils and the same situation exists among the Atlantic Seaboard and Gulf Coast groups of refiners and it remains to be seen whether this enlarged output will be greater than the assured gain in consumption.

REFINED MARKET BAROMETER

Further improvement in refined markets was reported in several areas over the past week. Refinery gasoline and natural gasoline prices advanced when any changes were made and it is believed that additional price increases will materialize before the end of the month. The consumer demand for gasoline is showing a sizeable increase over the same period last year according to representative reports. A price war in California retail markets which has been pending for some time is disturbing the refinery market. Although the situation is not uniform in all refining areas the general trend in kerosene prices is upward. No important changes were reported in fuel oil where plenty of material appears to be available at present prices with a seasonal slump in demand at some consuming points. The situation in regard to lubricants is encouraging from the sellers' viewpoint. The demand for both paraffin base and asphaltic base stocks has improved. The wax situation has not improved and a few refiners have found it necessary to reduce prices.

Mid-Continent—Refinery gasoline and natural gasoline prices generally higher. Better demand for kerosene and prices higher in most areas. Fuel oil movement slow with minor changes in prices. General range of distillate and gas oil prices unchanged with better demand. No change in lubricants and wax.

East Coast—Gasoline situation continues to show improvement and prices higher. Moderate activity in kerosene. All grades of cylinder stocks easy. No change in gas oil. Bullish attitude as to future trend in fuel oil prices. Export market inactive.

Pennsylvania—General range of prices unchanged although demand for gasoline and kerosene has improved. Fair demand for lubricants. Wax prices lower.

Chicago—Gasoline prices generally higher. Cold weather first of week expected to slow up demand. Better demand for kerosene. Furnace oils quiet. More inquiries for fuel oil. Other products unchanged.

Gulf Coast—Better demand for pale and red oils. Gasoline stronger. Better movement for fuel oil.

California—Price war has resulted in general lowering of retail prices. Larger companies still maintaining refinery and tank wagon posted prices. No change in other products.

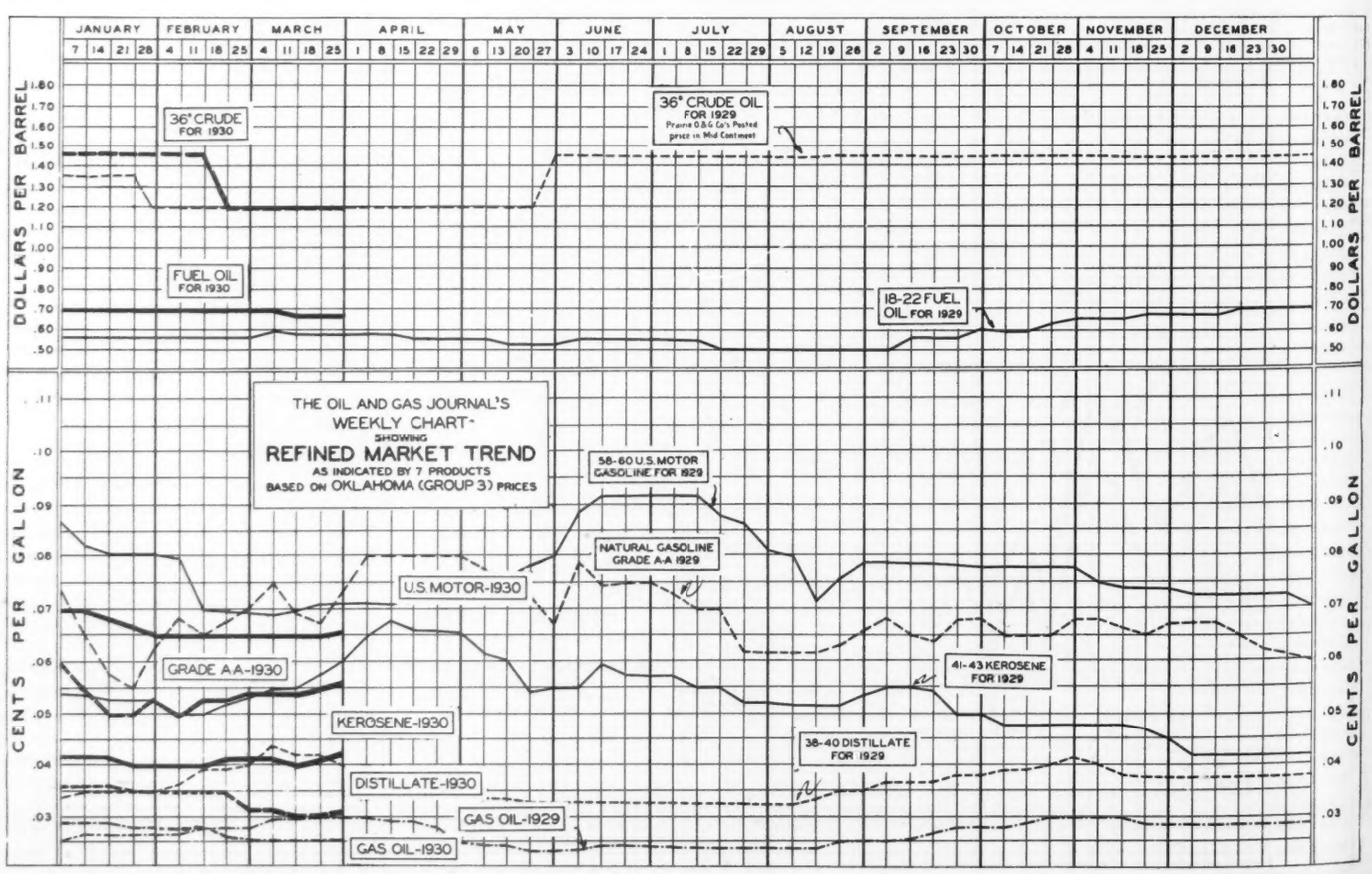
Situation Reversed

The past 10 days have brought a complete reversal of opinion in regard to the outlook for the tank car gasoline and kerosene prices in Oklahoma and the domestic market generally. Early in the month pessimism was general and many in the trade felt that a 5-cent tank car market in U. S. Motor gasoline was assured. No improvement was anticipated in kerosene and it was felt that other products would go lower before the improvement would get under way.

As explained in these columns last week the improved crude oil statistical situation especially in California is largely responsible for this changed attitude. Refiners who two weeks ago were predicting another reduction in posted crude oil prices are now faced with the possibility that schedules will return to the levels in effect over the greater part of last year and early this year. Representative trade opinions obtained during the past few days are in agreement that higher crude oil prices will materialize with a recovery in the tank car gasoline market.

It follows that this development is not wanted by a group of refiners who buy their crude oil supplies for plant operation. Several of these operators operated at a loss over the greater part of last year and they are hoping for a period in which an improved tank car market will

(Continued on Page 150)



Line to Supply Kansas Gas to Omaha

May Ultimately Be Extended to Des Moines and Minneapolis. Newest Moody-Seagraves Project Involves 900 Miles of Pipe

By Neil Williams

HOUSTON, Tex., Mar. 24.—The launching of another major natural gas transportation construction project, which when completed will make one of the largest systems of the many which have been undertaken and completed within the past few years, was made known with the announcement by the Missouri Valley Gas Co. that work will start immediately on laying a trunk line from southwestern Kansas to Omaha, Nebr.

The Missouri Valley Gas Co., which has established headquarters at Omaha, has just completed organization with D. B. Cogswell, formerly of the Moody-Seagraves interests of Houston, Tex., president; E. D. Adams and B. A. Hardey, vice presidents; W. J. Elkins, secretary and treasurer, and W. G. von Gemmingen, consulting engineer. The company has been formed and is owned and controlled by the Moody-Seagraves interests of Houston as a private undertaking separate from the other holdings of this group which includes the United Gas Co., which recently figured in a gigantic merger of gas producing, transportation, distribution and public utility properties.

The new gas transportation system started by the Missouri Valley Gas Co. will provide an outlet for the vast potential gas production of southeastern Kansas in cities of east and central Nebraska, west and central Iowa and southern Minnesota.

To Be 24-Inch Line

The trunk line for this system will be a 24-inch line which will be started immediately from the Hugoton gas field of Stevens County, Kansas, in the extreme southwestern part of the state, and which will have as its present northern terminus Omaha. As the project has as its sole purpose the placing of natural gas in Omaha and that part of the country, making no play for towns and cities along the way, the line will follow as near as possible a straight line from Hugoton, Kans., to Lincoln, Nebr., and thence to Omaha, a total distance of 394 miles.

Right of way for this trunk has been entirely completed and contracts placed with the A. O. Smith Corp. of Milwaukee for the pipe, delivery of which will begin from the plant April 1. First shipments will be made at the rate of 2½ miles of pipe daily which will be increased to 7 miles daily by May 1. Bids have been received for the laying of the pipe and contracts will be awarded this week. To facilitate speed in laying the line so that natural gas will be in Omaha early next autumn, work on the line will be carried on simultaneously at many points along the route.

While construction of the trunk line is being started obtaining of right of way for an extension of the line from Omaha and Council Bluffs, Iowa, on to Des Moines, Iowa, is nearly completed and work will be started as soon as possible. This line, which will follow a route through Mason City and Shenandoah, will be a combination 20-inch and 18-inch line, as will be a proposed extension from Omaha to Minneapolis. The Des Moines extension will require 90 miles of pipe and this with the Minneapolis extension and other tentative branches to various towns and cities seeking natural gas will make a total system of approximately 900 miles.

Capacity 185,000,000 Feet

The trunk line to Omaha, being 24-inch, will be one of the largest gas pipe lines in existence and, according to its present rating, it will have a capacity of 185,000,000 feet of gas daily. Definite locations of booster stations have not been announced but these will be placed at intervals of 45 to 50 miles along the line. Five to six thousand horsepower will be provided at each station and will give a working pressure in the line of 400 pounds per square inch. The line will be a combination welded and coupled line. Whether electric or acetylene welding will be practiced has not been determined.

The Missouri Valley Gas Co. at present is making only industrial contracts at Omaha and other major cities and has no franchises yet for domestic distribution. However, as the territory to be reached is not served by any other system and artificial gas is used in only a few of the larger cities, an extensive domestic market outlet is anticipated.

Hugoton Source of Supply

The source of the gas supply, the Hugoton Field of Stevens County, is expected to prove one of the biggest potential reserves in the country. The structure, which only comparatively recently was proved up, is similar to that of the Panhandle territory, or an extension of it. The Missouri Valley Gas Co., the Argus Production Co., which has been organized as a 100 per cent owned subsidiary, already is getting under way on an extensive development program to build up an actual reserve before the trunk line is completed to Omaha.

The Argus Production Co. has obtained an almost solid block of more than 300,000 acres, all of which is believed will eventually be in proven gas territory. Some production already has been obtained by the Argus Gas Co., which through lines recently put in operation by the Argus Pipe Line Co., is serving natural gas to 16 towns and cities in southwestern Kansas. The production end of the Argus Gas Co., which with the Argus Pipe Line Co., has been placed in the control of the Missouri Valley Gas Co., has been turned over to the new Argus Production Co. The latter company has moved eight rigs into Hugoton area and will rush all these full time in a systematic program of development.

The Argus Pipe Line Co. and the Argus Gas Co. have 86 miles of 8-inch pipe, and an additional system of small branches, the principal line extending from the field to Dodge City, Kans., headquarters of the company, where natural gas is distributed by the Argus Gas Co., and to Garden City, Kans. The Moody-Seagraves interests last autumn purchased control of these companies for a consideration of approximately $1,000,000. Local capital retained a partial ownership. At that time the gas system was not completed but, since then, the Moody-Seagraves interests have accomplished this and are operating the lines. The Argus Gas Co. and the Argus Pipe Line Co. will continue to operate entirely separately from the Missouri Valley Gas Co., buying their gas as an individual company from the Argus Production Co. The Missouri Valley Gas Co.'s 24-inch trunk line will not follow the right of way of the Dodge City 8-inch line, which it could do without adding very many more miles to the direct route to Omaha.

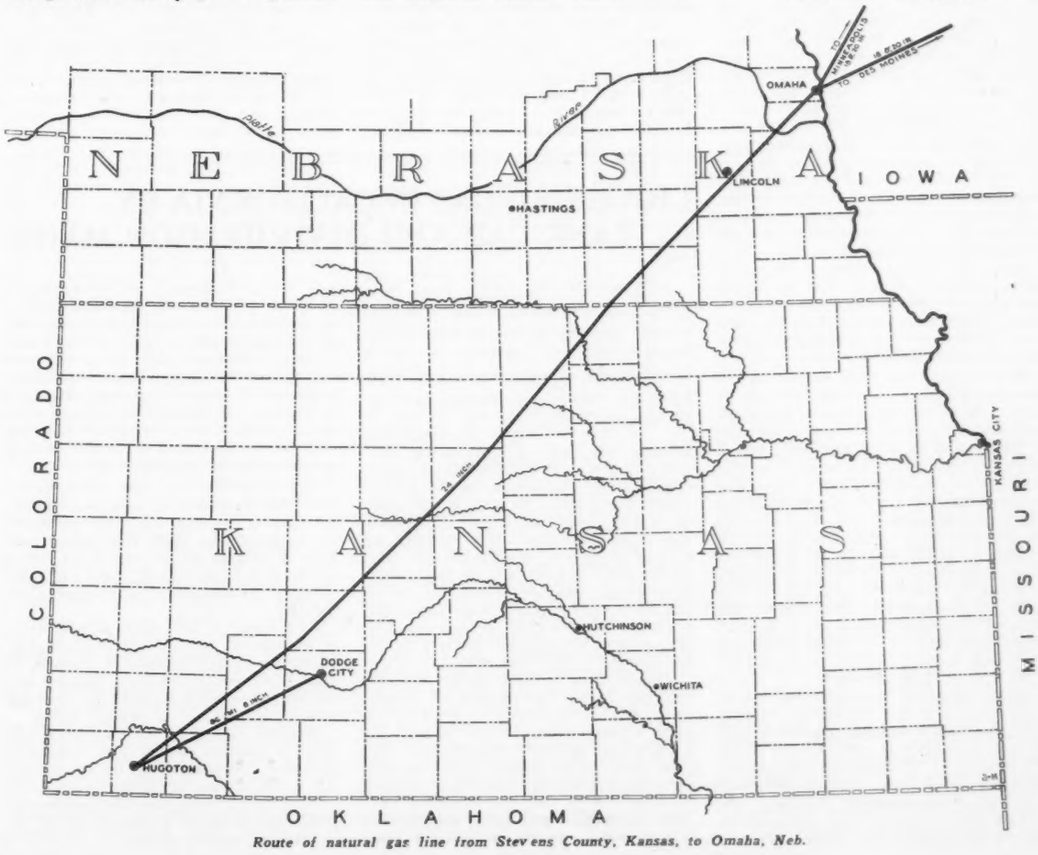
Moody-Seagraves Project

Local gas interests see in the formation of the Missouri Valley Gas Co. the nucleus of another gigantic gas producing, transportation and distribution organization to be built up by the Moody and Seagraves interests similar to the United Gas Co. which has risen to one of the foremost companies of its kind in the world through a comparatively brief period of just a few years. William Moody, III., and O. R. Seagraves, the principal owners, whose interests are extremely varied, got their start in the gas business at Corpus Christi, Tex., where they operated a local gas distribution business served with gas from the White Point and other small neighboring fields. Their first major venture was the laying of a 200-mile line from Southwest Texas fields, principally Refugio, to Houston, through the Houston Gulf Gas Co. They later projected a 22-inch line, that of the Dixie Gulf Gas Co., extending from Waskom, northeast Texas, to Port Arthur and Houston, tying in with the Houston Gulf Gas Co. system. Constant extensions and additions to these properties have resulted in a far-reaching organization.

The interests have been instrumental in the projecting of a number of major gas line systems through the United Gas Co. as a holding company. Among these were the laying of a 143-mile line from the Jennings Field of Southwest Texas to Monterrey, Mexico, and a 526-mile line, in conjunction with other owners, from Monroe, La., to St. Louis. Mergers and acquisitions have given them a foothold in all major gas producing areas in Louisiana, Arkansas and Texas.

The properties have just been involved in the $275,000,000 merger of holdings with the Louisiana Gas & Fuel Co., which is controlled by the Electric Bond & Shares; Magnolia Gas Co., owned by the Standard Oil Co. of New York and a group of small companies including Northern Texas Utilities and the Amarillo holdings of the Consolidated Gas Utili-

(Continued on Page 75)



Route of natural gas line from Stevens County, Kansas, to Omaha, Neb.

Court Names Gas-Oil Ratio Committee

Ralph Arnold, Joseph Jensen and F. E. O'Neil Appointed by Judge Hazlett Following Decision in Santa Fe Springs Case

By L. P. Stockman

LOS ANGELES, Calif., Mar. 22.—It begins to look as though the California oil industry is definitely headed for better times due primarily to conservation work and the successful outcome of court proceedings involving the California gas conservation law. This deduction is made in spite of the chaotic condition existing in the refined oil market on the Pacific Coast and, while executives do not anticipate immediate stabilization, the outlook is favorable for a general recovery during the course of the next 60 or 90 days.

Superior Judge William Hazlett, who recently upheld the constitutionality of the California gas conservation law, issued a preliminary injunction a few days ago restraining operators in the Santa Fe Springs Field from further waste of natural gas after 7 a.m. Saturday March 22, 1930, and this order has already gone into effect. Hearing on the petition for a permanent injunction will be held by him on June 16. In the meantime, Judge Hazlett will have disposed of the state's petition to enjoin operators at Long Beach from wasting natural gas as this case comes up for trial in his court on April 7. A similar action against Kettleman Hills operators is scheduled to get under way on April 1 in the superior court at Hanford, the county seat of Kings County.

As a result of the temporary injunction issued by Judge Hazlett, approximately 230,000,000 feet of natural gas will be conserved daily. Present daily production at Santa Fe Springs approximates 525,000,000 feet, compared with an allowable of 295,000,000 feet set by Judge Hazlett as the field's maximum. The limit set by the court is based on a gas oil ratio of 1,200 feet of natural gas for each barrel of potential oil production. In four cases, however, the court set a somewhat higher ratio as the general 1,200 to 1 ratio would have unduly penalized the operators given preference. It will not be known for another few days just how much crude oil production will be affected but preliminary figures indicate that field production may be reduced about 40,000 bbls. a day. This is more or less of a guess, however, as operators might shut in deep zone wells and open up some of the upper zone producers which have been shut in for some time. The effect of this would be to lessen the amount of oil curtailed.

It is obvious that enforcement of the gas conservation law at Santa Fe Springs will result in a substantial sympathetic reduction in crude oil production. George F. Getty will be hit especially hard, a check indicating that his production will probably be cut about 75 per cent. The General Petroleum will also be hit hard, the survey showing a possible reduction of 60 per cent. The Union will be obliged to pinch in only about 40 per cent of its Santa Fe Springs production to effect the necessary reduction in natural gas production. The Union and General Petroleum both have at least 25 upper zone wells which could be opened if desired.

Use of Gas

One of the most important features in connection with the temporary restraining order issued by Judge Hazlett is that the use of natural gas produced at Santa Fe Springs is of secondary importance. In other words, the court has decreed that the total production of natural gas in this field must under no circumstances exceed 295,000,000 feet daily. The establishment of this allowable maximum does not offer much incentive for operators to engage in repressuring operations. It is especially incongruous in view of the fact that while the gas law was framed for the specific purpose of eliminating gas waste operators will be permitted to dissipate any excess production into the air under Judge Hazlett's temporary restraining order.

The court, in its temporary restraining order, does not specifically prohibit the blowing of dry natural gas into the air but hopes to prevent this economic waste by working from another angle by limiting the maximum amount of gas which may be produced by each property. On this basis the court assumed that the waste of natural gas will be eliminated, or at least substantially reduced if the total production of natural gas is restricted. In other words, an operator with an allowable maximum daily production of 25,000,000 feet of natural gas will be permitted to blow any or all of this gas into the air if he is unable to sell it or utilize it in some other way. In this instance the operator is complying with the court order by limiting his production to the maximum allowed by the court, notwithstanding that he may be still blowing gas into the air in contravention to the purpose and intent of the act which definitely prohibits the blowing of natural gas into the air.

Appeal Can Be Taken

The establishment by the court of an allowable maximum daily production of natural gas for each property has another disadvantageous feature in that it prevents an operator from producing in excess of the maximum, notwithstanding that he has a definite use for an additional amount of natural gas above the maximum. In one case an operator has a well at Santa Fe Springs producing approximately 750,000 feet of natural gas daily. Under the new order the production of natural gas from this well will in the future be limited to about 400,000 feet daily. During the course of business this operator requires approximately 750,000 feet daily for the conduct of business in another field and in the operation of a small refinery. By limiting the natural gas production in this instance this operator will be obliged to purchase the deficiency in the open market, or arrange to take some of the natural gas which other operators may be blowing into the iar. It is possible that the company will be able to secure relief by petitioning the court. Several inconsistencies of this nature exist in the court order but it is believed that Judge Hazlett has pursued the proper course and will ulitmately accomplish the desired results. An appeal to the supreme court may be taken upon conclusion of the hearing on the permanent injunction which will be resumed on June 13 and, while the outcome of this appeal cannot be foreseen, it is the consensus that the decision of the superior court will be sustained. Long Beach is next on the calendar in Southern California and with a precedent established at Santa Fe Springs, this will probably be more or less of a formality.

Text of Decision

Judge Hazlett in announcing his decision relating to the issuance of a temporary restraining order held that, "the court finds that there appears to be an unreasonable waste of natural gas in the Santa Fe Springs Field and that sufficient cause has been shown for the extraordinary relief of a preliminary injunction pending trial of the action on the merits and entry of a final judgment. It is ordered and decreed that (1) the defendants are hereby restrained from blowing, releasing or permitting any natural gas to escape into the air from any well or wells in the Santa Fe Springs Field before the removal of the gasoline from such natural gas. (2) From operating any well producing natural gas in the Santa Fe Springs Field except while exercising a high degree of care in the selection and adjustment of appliances and in the use thereof for the purpose of keeping each producing well in its 'optimum gas-oil ratio'—the term 'optimum gas-oil ratio' being defined as the smallest number of feet of gas which can be produced with each barrel of oil from the same well at the same time. (3) From producing more net formation gas or the average day of each seven-day period from any lease or other property unit than is set forth in the allowed gas production column in the affixed schedule.

"It is further ordered that beginning Saturday, March 22, 1930, and continuing until the further order of this court each defendant prepare two copies of a report and file one copy with the clerk of this court in this action and file the other copy with the State Oil and Gas Supervisor at his office in the city of Los Angeles, which reports shall show the day of production, name of operating company, the name of the lease or other operating property, the identification of each well from which oil and gas or oil or gas was produced, and the quantity of oil and the quantity of gas produced from each well during the day of 24 hours covered by the report, the persons to whom the gas is delivered, the quantity disposed of from each lease or other operating property for repressuring for plant fuel, for field use, for other fuel use, to companies for resale, for transport out of the field and the quantity blown into the air, and each said report shall be filed as aforesaid within 48 hours after the expiration of the day to which the report refers. Each operator shall likewise file a summary for the seven-day period of March 22 to March 28, inclusive, and for the period of March 29 to April 4 and from April 5 to April 11, inclusive, showing for each seven-day period each of the items mentioned above.

Check of Production

"The State Oil and Gas Supervisor is authorized and directed to require each defendant to install such meters and other measuring devices upon each lease or other operating property and at each well thereon as may be necessary and to otherwise require the defendant to operate each well and to keep the production therefrom available for measurement in such manner as shall enable said State Oil and Gas Supervisor to check both said reports and the measuring devices and the production equipment to determine the accuracy of said reports and the amount of both oil and gas production for the time being from each of said wells. Formation gas production shall be reported where well is on gas lift.

"It is further ordered that nothing in this order contained shall prevent any defendant from allowing any well now drilling or hereafter drilled by him or it in said Santa Fe Springs Field from discharging gas into the air during such time as may be necessary properly to complete and place each such new well on production, and for a period not exceeding five days thereafter so long as the lessor, lessee or operator completing such new well proceeds with diligence according to the best practice in the field and in compliance with law and regulations of the State Oil and Gas Supervisor made pursuant thereto to place such new well on production and to prevent the gas from such new well being blown or allowed to escape into the air.

"It is further ordered that this order of preliminary injunction is made without prejudice to the right of the plaintiffs or of the defendants or any of them at any time hereafter on five days' notice to move to vacate or modify the injunction hereby granted whenever so advised and the court expressly reserves jurisdiction to hear and determine any such motion and thereupon to continue to effect or vacate or modify this preliminary

(Continued on Page 149)

LIQUEFIED GAS IN CALIFORNIA BY TANK CAR AND DISTRIBUTION MAINS

LOS ANGELES, Calif., Mar. 22.—Through a new system of distribution of natural gas, every community of the Pacific Coast not otherwise served by manufactured or natural gas will be offered gas service for domestic and industrial purposes. This will be done by the Natural Gas Corp. of California, Natural Gas Corp. of Oregon, and Natural Gas Corp. of Washington, all three of which are subsidiaries of the Pacific Public Service Co., in turn a subsidiary of the Standard Oil Co. of California. The three companies were recently acquired by Pacific Public Service from Thebo, Starr & Anderton, the engineering firm which organized them and which will be in charge of the engineering and construction work of all of the companies. The engineering firm will retain a minority interest in all companies.

This program involves the use of a new principle in the distribution of natural gas and permits service to be given to large or small communities without the construction of costly transmission pipe lines from the oil fields. Under the new plan liquefied natural gas will be shipped in tank cars or tank trucks to the various communities and there subjected to a carburetion process at a local plant and delivered through an ordinary gas distribution system in the same manner as artificial or natural gas is delivered in the larger cities, such as San Francisco and Oakland. Due to the low cost of liquefied natural gas and the small investment in local carbureting plants, it is possible profitably to serve small communities which have heretofore been denied gas service, and to render service equal to that of the largest cities.

The distribution of gas through this new plan furnishes an additional outlet for natural gas from the great reservoirs of the Kettleman Hills, from which supplies of natural gas are now being drawn for the San Francisco Bay area and other principal communities of Central California.

As a chain of local units is built up it is anticipated that ultimately sufficient business may be developed to warrant, in some localities, linking them together and serving them with natural gas through pipe lines from the oil and gas fields.

Natural Gas Corp. of California will have a hearing before the California Railroad Commission on its application for a certificate of public convenience and necessity, following the issuance of which construction of plants will be instituted at several points.

Sidney Powers Will Head A. A. P. G.

Elected at Largely Attended Annual Meeting in New Orleans. Geologists Plan Important Work. San Antonio in 1931

By Curtis Vinson

NEW ORLEANS, La., Mar. 22—Presentation of a general technical program featuring the Mississippi embayment, and adoption in business session of a resolution favoring the expansion of the present Mississippi River Laboratory, established by Maj. Gen. Lytle Brown, chief of the Corps of Engineers, United States Army, and his colleagues, into a permanent scientific observatory for the study of flood control marked the fifteenth annual meeting of the American Association of Petroleum Geologists, held here Thursday, Friday and today.

Sidney Powers Elected President

Sidney Powers, chief geologist of the Amerada Petroleum Corp., Tulsa, was elected president of the association for the ensuing year.

Other officers of the association for the new year were elected as follows: R. D. Reed, chief geologist of The Texas Company in California, Los Angeles, first vice president; Marvin Lee, consulting geologist, Wichita Kan., second vice president, in charge of finances; Dr. F. H. Lahee, chief geologist of the Sun Oil Co., Dallas, third vice president, in charge of editorial work, re-elected.

San Antonio in 1931

The executive committee, including the officers named and J. Y. Snyder, Shreveport, retiring president, announced the selection of San Antonio as the 1931 meeting place. Other cities that bid for next year's meeting included Kansas City and Oklahoma City. Attention of the 1931 meeting will be concentrated on the subject of occurrence of oil in igneous rocks, the association voted.

Registration for the meeting here was in excess of 900, according to report received from the registration headquarters, including members and guests and their wives. Active members present numbered in excess of 400.

Dr. A. B. Dinwiddie, president of Tulane University, welcomed the petroleum geologists and guests to New Orleans at the opening session of the meeting Thursday morning in the Roosevelt Hotel, convention headquarters. Doctor Dinwiddie was presented by R. A. Steinmayer, professor of geology at Tulane, the only member of the association in New Orleans. Response to the address of welcome was voiced by R. S. McFarland, vice president of the Sunray Oil Co., Tulsa, and past president of the association. Technical sessions by the association proper, by the Society of Economic Paleontologists and Mineralogists which convened in fourth annual meeting in conjunction with the national association, and by the geophysics group were held in the morning and afternoon throughout the three days of the meeting.

Important Future Activities

In addition to passing on various questions vitally related to the internal workings of the organization, the association put its stamp of approval on several projects of important bearing in the field of its future activity at the annual business meeting. Among these latter matters was the approval of a plan for financing through solicitation a $50,000 general research fund as well as research foundations in amounts of $5,000 or more. Such solicitation of contributions in the name of the association for the general research fund and the foundations was authorized on the part of a committee to be named by the president. Income from the proposed $50,000 fund would be available for the promotion of research projects and activities specifically approved and supervised by the research committee. Revenue from the research foundations, each of which would carry the name of the donor, would also be employed for the promotion of specific projects, properly supervised. Principal of these latter foundations might also be used in research with the approval of the executive committee and the consent of the donor.

In the resolution favoring expansion of the Mississippi River Laboratory into a permanent scientific observatory to assemble all scientific facts and make a study of the various aspects of the problem of flood control, the association expressed commendation of the efforts of Major General Brown, of the Corps of Engineers, United States Army, and his colleagues in establishing the present laboratory and proffered its services in establishing a permanent observatory.

Monograph on World Oil Resources

Invitation of the organization committee for the sixteenth International Geology Congress, which will meet in the United States in 1932, to edit and publish a proposed monograph dealing with the petroleum resources of the world, was accepted. Such a task, Wallace E. Pratt, of the Humble Oil & Refining Co., Houston, chairman of the business committee which presented the various matters acted upon to the association, said, offers a fine opportunity for service on the part of the American Association of Petroleum Geologists.

Outstanding among matters relating to the internal workings of the association passed upon were those dealing with procedure of election of officers, authorization for submission of revised constitution and by-laws to members of the association for study and ballot and interpretation of membership requirements of the constitution to admit geophysicists to membership in the association.

Conduct of Elections

Considerable sentiment among members of the association regarding the procedure of electing officers was evident. Under the present constitution and by-laws, officers are nominated from the floor of the convention and are voted on by printed ballot. In submitting the report of the business committee, Mr. Pratt, the chairman, indicated that some discussion had prevailed in the meeting of that committee prior to the opening of the convention regarding election procedure. No recommendation in this respect was made to the association, however.

Submission of the question to the membership at large was authorized by the association in the adoption of a motion presented from the floor by James H. Gardner, president of the Gardner Petroleum Co., Tulsa, proposing the appointment by the president of a committee of seven to canvass the various geological societies regarding election procedure. This committe is to report its findings at the San Antonio meeting.

The association also directed that the revised edition of the constitution and by-laws, reported out of the business committee, be submitted to the members to be studied and voted on. It is expected to require 30 days to get this out to the more than 1,000 active or voting members of the association, J. P. D. Hull, manager of the association, Tulsa, said. The revision as drawn up proposes among other things the broadening of provisions of membership requirements so as to allow men engaged in sciences closely allied to petroleum geology to become members of the association.

Invitation was extended to properly qualified and experienced geophysicists and paleontologists engaged in petroleum geology in its broader meaning to become members of the association on terms and with rights and privileges equal to those of geologists of the same rank. This action was in connection with the adoption of resolution submitted by R. S. McFarland, Tulsa, from the executive committee and reported out by the business committee, expressing the opinion that liberal interpretation of that part of the constitution regarding qualifications for membership justifies the admission of geophysicists as characterized. Paleontologists were included in the invitation on motion of C. R.McCollom.

Meeting in Canada Proposed

The association recommended that the executive committee arrange for a fall meeting with the Canadian geologists in Banff and that commendation be extended to the San Angelo Geological Society for interest shown in joining with the American Mining Congress and American Institute of Mining and Metallurgical Engineers in proposed fall meeting at El Paso.

Recommendation that the executive committe take such steps as its discretion dictates to encourage groups or membership at large to contribute to the revolving publication fund was voted, the purpose in mind being to increase this fund from $5,000 to $10,000.

Petitions for charters were granted to the Maracaibo Association of Geologists as a sectional association and to the Society of Economic Paleontologists and Mineralogists as a section of the national association.

Mr. Pratt, chairman of the general business committee, reported that proposal to change the date for the annual meeting to January was not approved by the business committee.

The meeting of the general business committee at which the matters mentioned were considered for report as cited to the association as a whole was held the day prior to the opening of the convention. Other committees that met prior to the convention for drawing up reports included the constitution committee, executive committee and research committee. The report of the general business committee was adopted in its entirety by the association.

Reports of Officers

Reports of officers submitted at the business session included those of President Snyder, of Shreveport; Vice President A. R. Denison, of Fort Worth, and Vice President F. H. Lahee, of Dallas. President Snyder, as retiring chief executive, reviewed briefly the work of the association during his term of office. He cited as one of the most important of the duties of the executive committee the passing on applications for membership and of the members as sponsoring applications for membership.

The report of Mr. Denison, second vice president in charge of finances, submitted in mimeographed form, showed net gain in membership during the 12 months of 166, with total membership at present of 2,292, of which 1,683 are active members and 602 associate members. This growth has been attained from a total of 94 members shown in the first published list in 1917. Thirty-nine states and 30 foreign countries are represented in the membership, with approximately 90 per cent of the members living within the United States, the report set forth. Among the states, Texas leads with 657 and Oklahoma is second with 521. Those two states together with California and Kansas have a total of 1,571 members, or approximately 70 per cent of the entire membership. The association business reflects a safe balance of income over expenses, the report pointed out, closing with the comment: "It may be said that the association registered substantial gains both in membership and in finance; at the same time it has rendered larger and broader service to each individual

(Continued on Page 148)

GEOPHYSICISTS MAY ORGANIZE INTO PERMANENT SEPARATE GROUP

By Curtis Vinson

NEW ORLEANS, La., Mar. 22.—Possibility of permanent organization of geophysicists into a definite group that may petition for a charter as a section of the American Association of Petroleum Geologists looms as the result of action taken during the annual meeting here of the national association.

The American Association of Petroleum Geologists went on record at its business meeting as interpreting the present provisions of the constitution relating to membership requirements to justify admission as members of qualified and experienced geophysicists engaged in petroleum geology in its broader meaning. In taking this stand the association invited such geophysicists to become members on terms and with rights and privileges equal to those of geologists of the same rank.

D. C. Barton, consulting geologist and geophysicist, of Houston, who sat as a member of the business and constitutional committees of the national association, indicated that the question of organization of the geophysicists into a definite group was being considered. According to Mr. Barton, a meeting was held recently in Houston to discuss the matter of organization. He was named temporary president of the group at this Houston meeting and other temporary officers were named as follows: Dr. E. E. Rosaire, district chairman in seismic work for the Geophysical Research Corp., Houston, vice president; John Weinzierl, consulting geologist and geophysicist, Houston, secretary. It was decided at this Houston meeting to take up with the national association at the New Orleans meeting the question of membership. Revised constitution and by-laws to be submitted to the national association members provide for broadening of membership qualifications.

A special group session of the geophysicists was held here in conjunction with the meeting of the national association with technical program dealing particularly with geophysical methods and results, this meeting being arranged by the national association of petroleum geologists. Doctor Barton presided at the group session.

In recalling early efforts in the geophysical field, Doctor Barton said that it was just six years ago, in 1924 and about the time the American Association of Petroleum Geologists met in Houston, that the first salt dome was discovered by geophysical methods. Torsion balance crew working under Doctor Barton for the Rycade Oil Corp. discovered at that time the Nash salt dome, about 60 miles southwest of Houston.

"At that time 42 known salt domes in the Gulf Coast country had been discovered by geology and accident," Doctor Barton said. "These discoveries were during the period from 1901 to that date. About a year ago the number of known domes established either by the drill or geophysical methods totaled about 100. During the past year, geophysical methods have discovered at least 20 salt domes and possibly 30."

Problem of Drainage at Kettleman Hills

One of Many Concerning Subsurface Conditions in That Spectacular Reservoir. Theoretical Mechanics of Oil and Gas Wells

By Stanley C. Herold*

Marvelous and magnificent though the Temblor reservoir at Kettleman Hills may be from the point of view of production possibilities, it is none the less subject to the same natural laws of performance as those displayed within the smallest, or the weakest, producing zone in this state. The pressures are intense, the oil and gas are great in quantity and high in quality; yet the magnitude of mere numbers in themselves should not confound us in our attempt to analyze subsurface conditions in this otherwise spectacular reservoir.

Of course we cannot inspect personally all parts of this or any other reservoir. The best we can do is to observe carefully the performance of the wells under the various conditions to which we may subject them. It is to be supposed that we already have a fair idea concerning the general stratigraphic and structural features of the region—at the surface and below—likewise definite ideas concerning the lithologic features of the producing zone and its adjacent formations. We shall have, then, the general setting for our picture of the reservoir, a setting prepared by geological examination and subsequent conclusions by inference, and furthermore by laboratory tests performed upon core samples.

Temblor Formation

We see the exposure of the Temblor formation to the southwest of Kettleman Hills in the frontal hills of the Coast Ranges—a snake-like line on the map. It is the Reef Ridge, varying in altitude from 1,500 to 2,500 feet above the sea. At 10 places it is cut by streams which flow intermittently from the hills toward the plains. The average elevation at these stream-cuts is 1,600 feet above the sea. At Tar Canyon, about 4½ miles southeast of the Fresno-King County line, the cut stands at 1,500 feet.

The Kettleman Hills structures are shown in outline. The border represents what is supposedly the lowest closed contour on the top of the Temblor formation at 7,800 feet below sea level. A few conspicuous wells are spotted at their locations. As we all know, production at the present time is confined to the so-called North Dome. At the surface this dome varies in altitude up to 1,370 feet above sea, rising from a plain of 800 feet elevation on the southwest, and a valley of 500 feet on the northeast.

There is a line drawn from Tar Canyon northeastward to the Shell Armstrong well No. 1, paralleling the county line. From the canyon to the well the distance is approximately 9 miles.

Subsurface Conditions

A favorite indoor game of the geologist is to draw inferences respecting subsurface conditions in interesting regions. Let us then specify the aforementioned line as a line of vertical profile and we have as a result Figure 2.

Except for the setting this picture may well be described as a bent glass tube filled with sand, supported by brackets on the laboratory table. If we have put in sufficient water at the upper end, and if we have provided an auxiliary vertical tube at the arch of the main tube, then such an opening provided by the vertical tube should produce any air and, along with it any water vapor or water as spray, which may have become trapped on the arch. Perhaps nature has filled the Temblor formation with stream water at Tar Canyon. The water supply is intermittent, but certainly sufficient time has elapsed since the upheaval of Reef Ridge for the accomplishment of such a task, provided leakage from the system is nil or at least incapable of over balancing the supply of water. As to leakage, all we can say is that there is no evidence of it within the limits of Figure 1 as previously shown. We do not know whether or not there is leakage within the formation itself, beyond, and therefore past, the point E now before us. But if the formation is filled to the top at Tar Canyon, why should there not be an agreement between its calculated pressure at 7,340 feet vertically downward from the exposure, and the pressure calculated from the weight of the mud-fluid in the Shell Armstrong well at the time it broke loose with production on test?

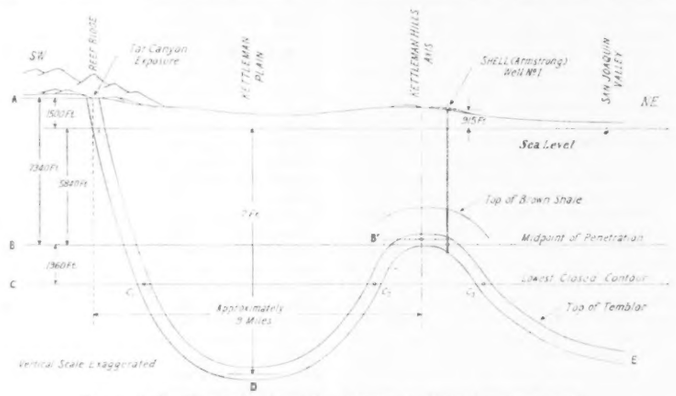


Figure 2—Profile section from Tar Canyon to Shell Armstrong well.

Without attempting to give the details of such calculations, let me say that with water of a specific gravity 1.025 on account of soluble salts in the sands of the Temblor formation, and the weight of the mud-fluid at 72 pounds per cubic foot, we have, respectively, the pressures of 3,261 and 3,220 pounds per square inch.

We should not rely upon calculations with respect to one well alone; it would be better if we used all wells—there are now eight of them for which the data are available. In six wells, including the Shell Armstrong, the agreement is within 100 pounds per square inch. With the seventh well the pressure calculated from the mud data is 538 pounds too low, while in the eighth it is 550 pounds too great. At the present time we may give greater credit to pressure values calculated from the outcrop. The agreement among six sets of calculations is significant; we may safely assume that the pressures at the wells are due to a hydrostatic head provided by water in the Temblor formation.

The wells produce under conditions of extreme pressures. The fluids are gas, vapor and atomized oil. Together they weigh little more than air; there is no column of liquid in the hole during production—liquid which in most oil fields partially offsets the formation pressures by its weight. Here the pressures at the head of the well are almost equal to the pressures at depth.

Classifying the Wells

We can classify the Kettleman wells as gas wells. In so designating them we do not slander them or bring into question their economic worth. Our calculations, based upon physicochemical tests, show that a very small portion, in fact 2 per cent, of the pore space in the sands is occupied by liquid. The average porosity of the formation is 12 per cent. We may be definitely assured that the pore spaces proper are filled with gas and vapors of gasoline and oil, while the canals connecting the pores hold the oil, with its gas and vapors in solution. This oil is atomized by the rapid linear motion of the gas toward the open well, and it emerges in the form of spray to be caught in traps. If by-passing is taken in its accepted sense, then it may be said that all oil production on the North Dome takes place in virtue of by-passing, for it is by-passing alone which can cause spray.

Before the discovery well was drilled in the fluids within the reservoir existed in two phases—the liquid phase and the gaseous phase. Naturally, with a release of pressure offered by the open well, the constituents of these phases alter somewhat. If the fluids had been encountered at 9,400 feet below sea level, approximately 3,700 feet below the position actually encountered, we would have found only the gaseous phase in existence. While at such a depth the greater pressure tends to form a single liquid phase,

(Continued on Page 146)

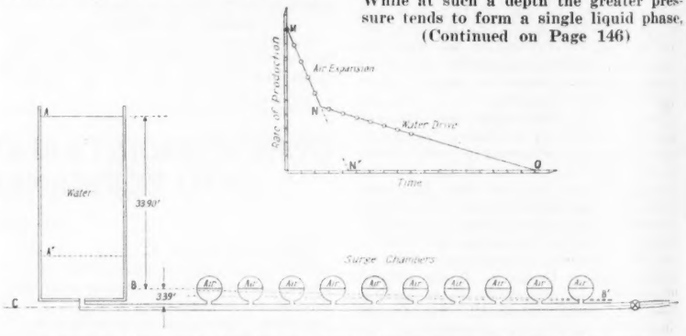


Figure 3—Water tank, flow line and surge chamber system with production curve.

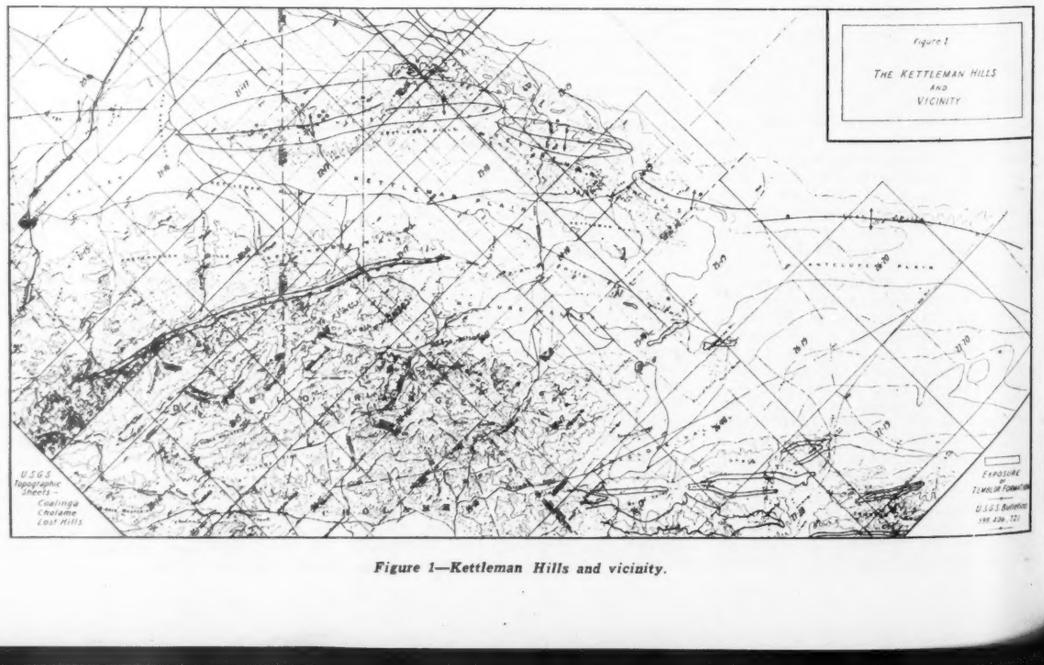


Figure 1—Kettleman Hills and vicinity.

*Courtesy of Union Oil Co. Before A.P.I. meeting at Oil Equipment and Engineering Exposition, Los Angeles, Calif.

Properties of Automotive Lubricants

Changing Design in Motors and Varying Operating Conditions Reflected in Quality of Oils

By H. C. Mougey
Research Laboratories, General Motors Corp.*

There are several methods by which we may attack the problem of determining "What are the significant properties of automotive lubricants." The most common method, used by both producers and consumers alike, is to try to duplicate the properties of a lubricant which has been found by experience to be satisfactory. This method is satisfactory to the producer in enabling him to produce a uniform product and to the consumer in enabling him to purchase additional quantities of lubricants similar to those which he has already used. One of the objections to this method is that if a superior lubricant should be developed, it obviously would be different from the lubricant taken as a standard to be duplicated, and as a result, by this method superior lubricants would of necessity be rejected, and the better the lubricants were, the farther off they might be from the specification.

The next step in this method is to establish maximum or minimum limits to the properties instead of establishing a range. For example, instead of specifying that the flashpoint should be between 400 and 430° F., it might be specified as 400° F. minimum, thus permitting an oil with a flashpoint of 450° F., and also thus inferring from the wording of the specifications that an oil with a flashpoint of 450° F. is considered to be superior to one with a flashpoint of 430° F. However, the large commercial use of western oils with lower flashpoints cast doubt upon the truth of this assumption in regard to the necessity of a high flashpoint oil, and the introduction and use of prediluted oils with very low flashpoints showed that although flash and firepoints might be used to check uniformity in shipments, they could not be used as a direct measure of quality in the oil. In a similar manner, commercial use of lubricants has shown that certain other tests such as color, gravity, acid number, emulsification test, etc., cannot be used as definite measures of quality of motor oils, although they may be used in checking uniformity and in describing an oil to be purchased and in checking the incoming shipments. This conclusion is in accord with the report on the Significance of Tests of Petroleum Products[1], prepared by the society's Committee D-2 on Petroleum Products and Lubricants, and with the paper on the same subject by Wilson and Barnard[2] presented before the society in 1928.

Another step in the evolution of attempts to specify the desirable properties of lubricants was that of developing a special laboratory test and then arbitrarily deciding that good lubricants must meet the special test and that oils which do not meet the special test are lacking in quality. The Waters carbon test is an example of one of these tests. It is now obsolete, but the difficulty in securing reproducible results was probably the greatest factor in this test being discarded. At the present time, several oxidation tests are being used to a limited extent although there do not appear to be many data indicating whether or not these oxidation tests are in any way related to quality in motor oils.

Since oils are purchased to lubricate definite equipment, it is apparent that performance in service is the real method of checking their quality, but because of the many variables in service and the difficulty and expense of making tests under actual service conditions, it is necessary to have laboratory tests. If these tests are to be used simply as identification tests, there is no necessity of their being in any way related to performance in service. Tests that are to be used as a measure of quality must be related to service, and since conditions of service vary so greatly, a property that is desirable in an oil for one use may be very undesirable in an oil for another use. For example, the biggest problem we have in lubricating automobile engines in summer is excessive oil consumption at high speed and temperature. The use of an oil of high viscosity tends to help in this problem. In winter our problems are to get the engine started and to establish circulation of the lubricant. Low viscosity oils are desirable for these conditions,[3] and in addition, oils with low pour tests will tend to flow to the pump intake better than those with high pour tests although the pour test is of very little value in affecting the flow of the oil in the oil lines after it leaves the oil pump.

In order to operate well under both starting and running conditions in both summer and winter it appears that an oil should have a pour test low enough to permit the oil to flow to the pump inlet at the starting temperature and that the oil should be low enough in viscosity at low temperatures to permit easy starting and that it should be high enough in viscosity under high speed conditions to prevent excessive oil consumption. With lubricating systems such as we have in commercial use it appears to be impossible to obtain an oil with both of these last two properties, and if we insist on high viscosity at high temperatures for oil consumption reasons we are going to have trouble on cranking at low temperatures due to the viscosity being too high. Oils with a low viscosity-temperature change are sometimes recommended as a solution of this problem. We are dependent upon the atmospheric temperature for the low limit of our temperature range, but decreasing the temperature range by limiting the maximum oil temperature with oil coolers may be another solution to the problem of change of viscosity with temperature. Still another solution which might be more commercial would be to design a lubricating system giving approximately the same oil consumption with oils of high or low viscosity, thus making it possible to use low viscosity oils for cold weather starting and still avoid high oil consumption at high speeds and temperatures. This would make the viscosity-temperature slope of little importance and since it is easy to obtain from practically all crude oils low viscosity oils with low carbon residue and pour tests, such a solution to the problem would help greatly in getting universal distribution of satisfactory motor oils.

Measuring Quality

In this discussion we have been referring to quality in lubricating oils as if it were a definite property, but we have not defined quality. In fact, we have not been considering lubricating properties as such, at all. Tests such as gravity, color, flashpoint, firepoint, emulsion test, etc., are not related to the lubricating value of a motor oil, but their use is in identifying oils, for controlling uniformity in production, and for specifying and checking purchases. We have seen how viscosity and pour tests may be related to performance in service and how differences in engine design may affect these properties, but while these tests are of value in determining the suitability of an oil for a definite engine under definite operating conditions, these tests do not measure quality. The carbon residue test formerly had a reputation for being related to quality, but it is well known that western oils are much lower in carbon residue than eastern oils of similar viscosities, and the work of Gruse, Livingstone and Mar-

(Continued on Page 147)

SIGNIFICANT CHARACTERISTICS OF MOTOR OILS

From this discussion it is apparent that the principal significant properties of automotive lubricants, in the order of their importance, are as follows: (1) Viscosity, (2) stability, (3) oiliness (under certain conditions).

Under stability we would include the viscosity-temperature slope and the effect of too high a pour test, when an oil changes from a liquid to a plastic mass that the lubricating system may not be able to handle. Under stability we would also include any chemical changes by which the oil might cause corrosion, gumming, or excessive carbon. In addition, the oil should not be volatile enough to affect greatly oil consumption in the engine.

The question of oiliness is still undecided. Under certain conditions oiliness may be of great value, but more data on the relation of oiliness to performance in service is required.

When we consider motor oils from the standpoint of performance in service, it is apparent that this mysterious thing called quality is not a definite property of an oil but it is simply the result of using oils which are suitable for the uses to be made of them. The different tests that have been developed by Committee D-2 are not definite measures of quality, but they may be used to estimate quality in an oil for a particular use, and a property that may be tied up with quality in an oil for a certain use may be very undesirable in an oil for some other use. Any one property may become a measure of quality if the particular use to be made of the oil requires that property. Committee D-2 has done an excellent piece of work in developing and standardizing oil tests. The problem which they have in the future is that of making more definite the interpretation of oil tests and their relation to performance in service.

*Assistant technical director and chief chemist. Paper presented at regional meeting, American Society for Testing Materials.

[1]Report of Committee D-2 on Petroleum Products and Lubricants, Proceedings, American Society for Testing Materials, Vol. 28, Part I, p. 479 (1928).

[2]R. E. Wilson and D. P. Barnard, 4th, "The Significance of Various Tests Applied to Motor Oils," Proceedings, American Society for Testing Materials, Vol. 28, Part II, p. 674 (1928).

[3]R. E. Wilkin, P. T. Oak, and D. P. Barnard, "Motor Oil Characteristics and Performances at Low Temperatures," Journal, Society Automotive Engineers, Vol. 22, p. 213 (1928).

GRAVIMETRIC METHOD BASED ON USE OF TORSION BALANCE

By H. W. Rose*

During the past decade and particularly during the past few years the prominence given to geophysical methods of prospecting as an aid to geological exploration by oil and mining companies all over the world has created a considerable amount of interest, on the part of those associated with the oil and mining industries, in the geophysical instruments used, their operation, and the nature of the results of observations and the degree to which they can be used to interpret geological structures. One of the oldest of these new geophysical methods, and one which has played a prominent part in the development of commercial geophysical exploration, is the gravimetric method based on the use of the Eotvos torsion balance.

The original Eotvos torsion balance was designed and perfected over a quarter century ago by the late Baron Roland Eotvos, professor of physics at the University of Budapest, Hungary. In his studies of gravitation, to which he devoted most of his life, Baron Eotvos found a method of measuring extremely small local variations in the force of gravity, caused by irregularities in the distribution of mass in the rock materials making up the outer part of the earth's crust. He worked out a complicated mathematical theory describing these local gravity variations and designed and constructed an instrument capable of accurately measuring them.

Mathematical Theory

The mathematical theory developed by Eotvos is based on Newton's Law of Gravitation, which states that any two bodies exert upon each other a mutual attraction which is proportional to the product of their masses and inversely proportional to the square of the distance between them. In the earth's gravitational system the earth is one of the bodies and gravity is the force of attraction exerted by the earth on a body at its surface. The intensity of gravity is measured by the force of attraction exerted on a unit of mass, usually taken as one gram. The average value of gravity at sea level, in C.G.S. units, is about 980 dynes.

The value of gravity is not uniform over the earth's surface. On account of the earth's rotation and its spheroidal shape gravity is least at the equator and greatest at the poles. Furthermore, this variation in gravity is, in general, not regular as might be expected. There are small local disturbances due to the irregularity of form of the earth's surface and differences in density of the rock materials at and within a few miles of the surface. Local variations in gravity will be a maximum over areas of excess of mass and a minimum over areas of deficiency of mass. The lines along which the force of gravity is exerted,

(Continued on Page 112)

*Paper read before the Southern California section of the American Institute of Mining and Metallurgical Engineers, at the Oil Equipment & Engineering Exposition, Los Angeles, March 19, 1930.

Southern Louisiana Domes Reviewed

Most of the 50 Revealed by Geophysical Exploration Contain Oil, but Many Difficulties Confront the Operator

By E. R. Ames
Petroleum Engineer, Texas Creosoting Co.*

Along the southern Louisiana coast to the mouth of the Mississippi Delta region, during the last few years, geophysical methods have uncovered more than 50 salt domes, the large majority of which have been proven oil bearing in a commercial way. At present there are in the neighborhood of 60 wells being drilled on these domes, drilling operations are being carried on by more than 12 companies, and the area shows a daily production in excess of 25,000 bbls.

The problems presented differ from those encountered in any other part of the world. It is likely that the problems incident to development of the productive area on Lake Maracaibo in Venezuela more nearly approach those facing the oil companies operating in southern Louisiana, for the reason that the majority of the known salt domes are located either in the deep marshes or on open water reached by boat only, if accessible at all.

The main difficulty encountered in petroleum development work is the transportation factor, magnified by the time element, as movement of materials by water is slower than rail or automotive transportation. The highways of the Louisiana Gulf Coast area are lakes and bayous, together with canals which have been or must be constructed to connect the various natural waterways. Thus, the speedboat replaces the automobile, the tugboat serves in place of the truck, and the barge takes the place of the trailer, tank wagon or tank car. Speedboats are capable of making 20 to 30 miles per hour, while a tug with a tow does well to average 6 miles per hour.

Transporting Men Another Problem

In addition to transportation of equipment is the difficulty of transporting personnel, magnified by the absence of direct communication between drilling crews and tool-pushers and between tool-pushers and superintendents. Telephone and telegraph systems have not yet been extended to cover the area, and communication must be by speedboat or other means of water transportation.

Crews must be fed, cook houses must be maintained and newspapers and mail must be distributed daily if the personnel are to be kept contented.

The operations in the southern Louisiana coastal area are carried on from headquarters located at Orange, Tex., and the following Louisiana cities: Lake Charles, Lafayette, Opelousas, New Iberia, Plaquemine, Morgan City, Thibodaux, Houma and New Orleans.

Orange, Tex., the western gateway to coastal Louisiana, is the point of access to the Shell Petroleum Corp. operations in this section, and the shipping point at which all material is received by rail. From Orange, access is had down the Sabine River to the Intracoastal Canal, thence to Black Bayou, where the Shell is carrying on a large program of development. Although the operations of this company at Black Bayou are only about 9 miles from Orange as the crow flies, nevertheless, by fast speedboat it takes 30 to 40 minutes to reach the field headquarters from Orange, because of the meanderings of the bayous and waterways making up the route.

To carry on operations with a minimum loss of time, the Shell has recently expended $100,000 in the construction of permanent headquarters camp at Black Bayou in the marshes of Cameron Parish, Louisiana. This camp includes a steel warehouse, pipe racks, two bunk houses, mess hall, double bungalow for married employes, ice plant, sewer system, central power plant, and in fact everything which goes to make up a small city. This entire layout is built on a foundation of piles driven into the marsh and is accessible only by boat via a specially dug canal several hundred yards in length.

Special Telephone Line

The Black Bayou office is connected by a specially constructed telephone line to the exchange at Vinton, La., hence it is not entirely cut off from civilization. When a superintendent or tool-pusher leaves the office, however, to make the rounds of the wells, he is absolutely out of touch until he returns. Every piece of material used in the construction of this camp was unloaded from cars at Orange, Tex., reloaded on barges and towed to Black Bayou for use.

The Shell production from this area is handled by barge to the Intracoastal Canal, down the Sabine River, across Sabine Lake, and to the tank farm on the Neches River near Beaumont.

Between Orange, Tex., and Lake Charles, La., along the Old Spanish Trail, are the productive domes of Vinton, Edgerly and Sulphur, located on high land with ready access to good rail facilities. Northeast of Orange lies the productive dome known as Starks, on high land and well served by rail facilities.

South of Orange, almost on the Gulf proper, the Yount Lee Oil Co. is carrying on drilling operations at Johnson's Bayou, an area served either from Beaumont, Tex., via Sabine Lake, or from Orange via the Sabine River.

The Vacuum Oil Co. is drilling in the western edge of Cameron Parish south of the Shell Petroleum Corp.'s activities at Black Bayou, in the area known as Cameron Meadows, all material being barged in from Orange to location via a newly dug canal 6 miles in length, constructed by Vacuum to reach the spot picked as a drilling site.

Area Served Through Lake Charles

Following on east along the Intracoastal Canal comes the area served through Lake Charles as headquarters. From this city the following operations center: Vacuum Oil Co. at Lakeport, Pure Oil Co. at Sweet Lake, The Texas Company at Calcasieu Lake, and all operations at the East and Old Hackberry Fields. Access is had to all these fields by water from Lake Charles.

The Vacuum Oil Co.'s operations at Lockport are unique in that it has been necessary to construct a system of timber roads from the edge of the solid shell roads connecting all the wells. This has been made necessary by the extreme depth of the marsh in this area, estimated to average 60 feet.

The Calcasieu Lake Dome being tested by The Texas Company is approximately 11 miles out in Calcasieu Lake and is served from the East Hackberry Field, discovered in 1926 by Calcasieu Oil Co. This productive field is situated on the northwest shore of Calcasieu Lake, the development of which is partly on land and partly in the Lake waters, as well as in the waters of Kelso Bayou.

The Sweet Lake area being developed by the Pure Oil Co. is due east of Calcasieu Lake and is served directly by the Intracoastal Canal, which in its regular course utilizes the waters of Sweet Lake.

(Continued on Page 159)

*Before New Orleans meeting, A.A.P.G., March 1930. Preliminary copy, not revised.

James M. Guffey's Remarkable Career

Noted Veteran Oil Man Dies in Pittsburgh. For Many Years One of America's Outstanding Leaders in Oil and Gas

By James McIntyre

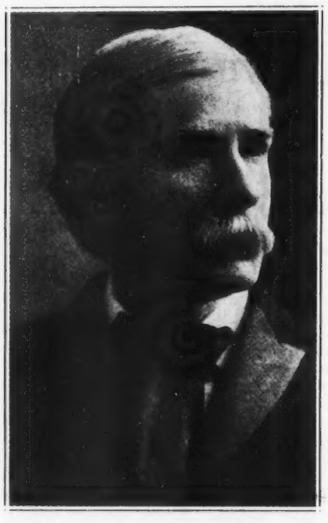
James McClurg Guffey, one of the most noted independent oil operators in the history of the oil business, died in Pittsburgh, Pa., on Thursday, March 20, at the age of 91 years.

To the young oil men of the present day the name of Jim Guffey is more or less an abstract quantity, but to the old-timer in the business it represents a concrete example of tremendous activity; of operations on a grand scale. To him it means a pioneer in outlandish places in the search for crude; it means the opening and successful development not only of pools, but of large producing divisions, like Kansas and Texas.

Volumes could be written of the career of James M. Guffey, both as an oil man and as a political leader. For whole decades he was among the big men in the oil industry, and for a large part of his career he was a leader in the national councils of the Democratic party.

During his most successful years and later in years of adversity, he had for his associate the famous John H. Galey, who died in 1915, and the career of one in the oil business was very much the career of the other. The firm of Guffey & Galey was organized in 1880 and for the next 25 years made important oil history. These men opened pools in Pennsylvania and West Virginia. They made Kansas an oil state and it has since produced over 480,000,000 bbls. of crude. They made Texas an oil state about the same time they were doing big things in the Osage Nation in Indian Territory. They opened the Coalinga Field in California, drilling the first two producing wells in a pool that has since produced over 313,000,000 bbls. They opened the Spindletop Pool in Texas, with an 80,000-bbl. well. They were at one time the largest producers of oil in the Pennsylvania Field with a production of 50,000 bbls. a day.

James M. Guffey was born in 1839 on a farm in Westmoreland County, Pennsylvania, next to the youngest of six children. At the age of 18 years he left the farm and going to Louisville, Ky., became a clerk in the office of the superintendent of the Louisville Railroad Co. This was in 1857. He remained with the railroad company for several years and then went to the Adams Southern Express Co. at Nashville, Tenn., in a much better position.



James M. Guffey

Oil Man in 1865

In 1864, just before the opening of the pool near what later became Pit Hole, in Venango County, Pennsylvania, Mr. Guffey went back to his native state attracted there by the stories of sudden wealth being made in the oil regions. He plunged into the oil business in Venango County and when Pit Hole grew to such size and importance that it became necessary to have some kind of a town government, Guffey was elected its first city clerk. He was now 27 years of age. With characteristic energy he went up and down western Pennsylvania seeking opportunities to reap a share of the harvest of money being made in the oil business, but finding wealth a very elusive thing.

In 1872 he was in St. Petersburg, Clarion County, Pennsylvania, where he became general agent for the Gibbs & Sterrett Manufacturing Co., at that time one of the largest dealers in oil well supplies. He acquired enough capital to develop some of the leases he had picked up through the oil region, and was successful early in his career as a practical oil operator. He became known throughout the region as a daring and resourceful man in the uncertain business of locating oil in the hit and miss fashion that prevailed in the early years of the industry.

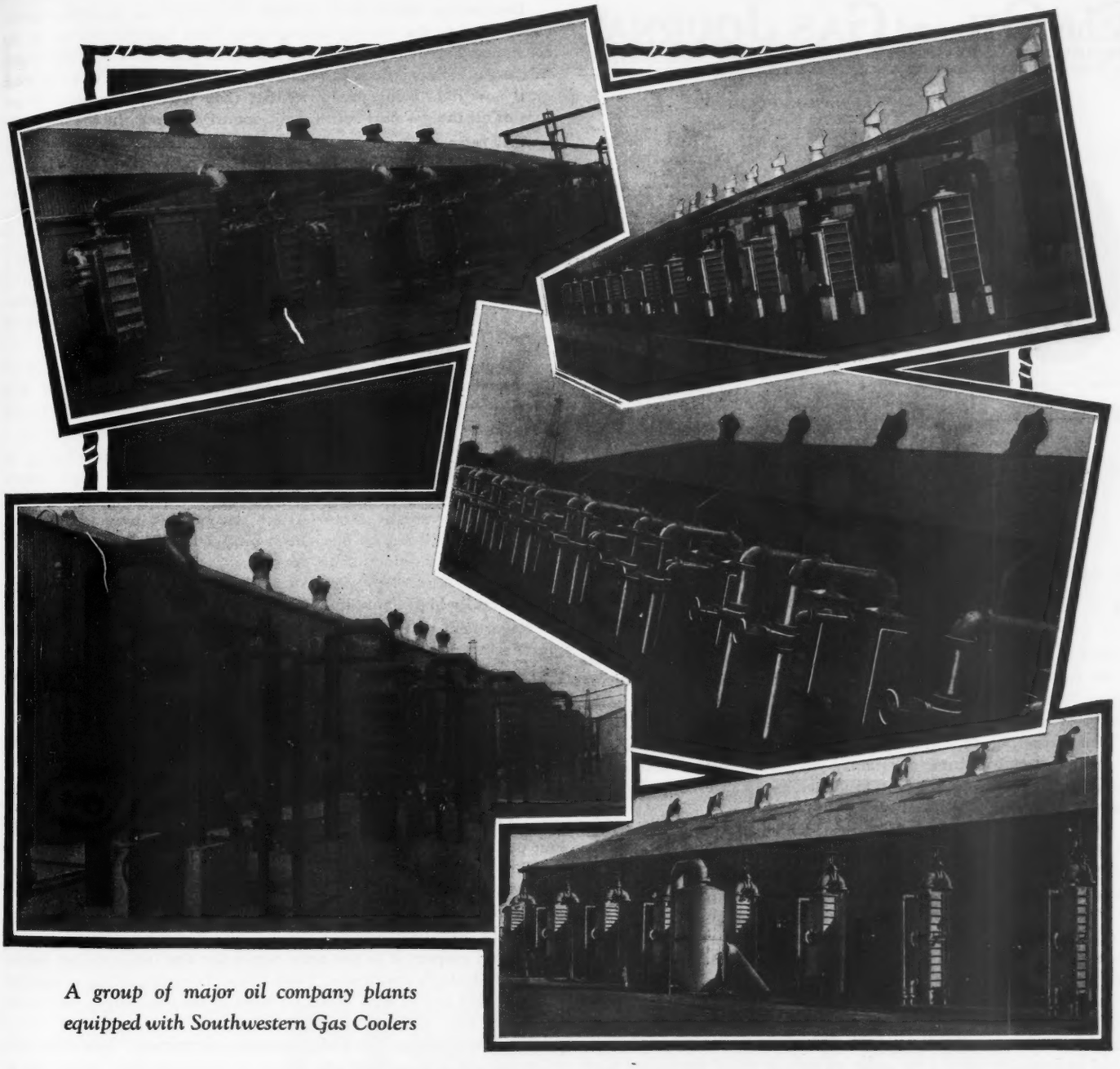
Mr. Guffey operated in every county that produces oil in Pennsylvania. He was always either a pioneer or was among the earliest in every important pool. Soon after oil was discovered in Bradford in 1875, Mr. Guffey was in the field where he became prominent. The town of Guffey, McKean County, was named for him and around it he operated.

Start of Guffey & Galey

In 1880, Mr. Guffey's career began in earnest. He and John H. Galey, who was cutting a wide swath as an individual producer in the Bradford and other Pennsylvania fields, became partners and remained so for many years. They opened the Sand Fork Pool in Lewis County, West Virginia, and one of their wells, locally called the Turner gusher, was an 8,000-bbl. initial producer. They opened the Kyle Pool in Tyler County in West Virginia.

The next important move of Guffey & Galey was their part in the development of the McDonald Field in Wash-

(Continued on Page 110)



A group of major oil company plants equipped with Southwestern Gas Coolers

THERE is only one reason why the major oil companies whose plants are pictured above chose Southwestern equipment . . . ***super efficiency!***

Southwestern Gas Coolers provide the most *economical* way to handle gas from both wells and compressors. The cross-flow design effectively cools the gas . . . the back pressure is surprisingly low . . . the units are compact and accessible.

We will be glad to supply full information regarding this super-efficient equipment

SOUTHWESTERN ENGINEERING CORPORATION

606 SOUTH HILL STREET
LOS ANGELES, CALIF.

605 MAYO BUILDING
TULSA, OKLAHOMA

117 LIBERTY ST. • NEW YORK CITY • ROOM 1606

TRANSPORTATION BLDG.
MONTREAL, CANADA

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle.

President - - - - - - - - - - - - - Frank T. Lauinger
General Manager - - - - - - - - - - John M. Egan
Editor - - - - - - - - - - - - - James McIntyre
Managing Editor - - - - - - - - - Andrew M. Rowley
Refinery Editor - - - - - - - - - - C. O. Willson
Technical Editor - - - - - - Charles K. Francis, Ph.D.
Petroleum Engineering Editor - - - - - L. G. E. Bignell
Associate Editor - - - - - - - - - W. T. Anderson
Associate Editor - - - - - - - - - W. T. Ziegenhain
Associate Editor - - - - - - - - - Thomas F. Smiley
Advertising Manager - - - - - - - - E. Klappenbach
Circulation Manager - - - - - - - - J. P. Mulkern

DISTRICT ADVERTISING OFFICES

C. L. CAIN - - - - - - 101 Park Ave., NEW YORK CITY
L. AUSTIN DE VORE - Room 1416—6 North Michigan, Ave., CHICAGO, ILL.
ALVIN E. LOEFFLER, State Theater Bldg., PITTSBURGH, PA.
C. R. JOHNSON - 730 Petroleum Securities Bldg., LOS ANGELES, CALIF.
C. R. FARMER - 1316 Second National Bank Bldg., HOUSTON, TEX.

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies	$ .15	One year (in United States)	$6.00
Three months	$2.00	One year (in Canada)	$7.00
Six months	$3.00	One year (foreign countries)	$7.00

ADVERTISING RATES ON APPLICATION
Telephones: 6291-6292-6293
Remittances by Checks, Drafts, Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
Cable address, "Oilgasnal"

MEMBER AUDIT BUREAU OF CIRCULATIONS

VOLUME AND VALUE

One of the most remarkable but least appreciated developments in the refining and marketing branches of the oil business during the past year has been the change in the public attitude towards the quality of motor fuel and motor oil.

The marketing departments of oil companies have, in response to popular requirements, constantly demanded better and better products and the manufacturing branches have centered their activities on supplying this demand.

In some quarters, this development, which has been called competition in quality, has been criticized as another phase of competition which benefits the consumer without corresponding profit to the industry, but this is a temporary and superficial view of it.

Although senseless competition, based on quality, can be carried to a point where it may be as disastrous as competition based on volume, there are several aspects of the present situation which are encouraging.

It has at least made the price cutter less secure.

Until within the past two or three years the average consumer thought of lubricating oil or gasoline as all of the same quality. He would laconically ask for "a quart of oil" or "five gallons of gas" apparently believing he would get the same products regardless of where he bought them as long as it was called lubricating oil or gasoline.

Conditions have changed and are continuing to change more rapidly. The buyer is becoming discriminating in his purchases, as attested by the fact that sales of premium gasolines now represent from 25 to more than 50 per cent of the sales of many marketing companies.

A similar situation exists in the distribution of motor oil, a larger percentage of buyers now being willing to pay from five to ten cents premium for a product which they believe will give them premium service.

The development which brought about this change in the attitude of so many buyers of gasoline and motor oils is too well known to need to be explained in detail.

The higher compression ratio and the greater speed of the modern motor vehicle demanded a better product than it had been customary to manufacture. The larger knowledge obtained regarding the detonation characteristics of motor fuel has, of course, been the outstanding factor which has been reflected in the specifications of gasoline.

Discoveries which were at first considered as of little significance outside the testing laboratories, have become known to the consumers and distributors with the result that sales of Ethyl Gasoline and other antiknock products have increased from week to week until now it is being predicted that they will approximate 25 per cent of all the gasoline sold in this country during the present year.

The refiners in keeping pace with developments in the automotive industry have found out a great many things about the performance of their fuel which they had not known before. Some of this research work has been along co-operative lines, such as that the Natural Gasoline Association of America has been sponsoring.

In brief, refiners have found that careful selection of their raw material and proper methods of refining, including precise control of fractionating equipment, has made it possible for them to offer their customers an improved product both from the standpoint of antiknock properties and volatility.

This evolution has undoubtedly had a stabilizing influence on the market, particularly on the operations of retail outlets. The price cutter finds his outlets being limited more and more to the customer who buys on price alone.

A rapidly increasing proportion of consumers is coming to realize that the cost of gasoline, (even including the high taxes), and of motor oil, represent but a small part of the total cost of operating a motor vehicle. Motorists are also being convinced that it is a very poor economy to buy cheap products and not only sacrifice the maximum satisfaction in operating their cars but run the risk of adding to their depreciation and maintenance costs, items which are the really big factors in the expense of operating motor vehicles.

Regardless of the handicaps which this development of quality purchasing may put upon individual concerns which have trusted to volume and cheapness as a selling policy, this trend towards improved products, so long as it is reflected in proportionate return, is a step in the right direction, and is to be welcomed. It gives the industry a chance to realize upon the work which its research and development departments have been doing and which would otherwise have been unrewarded.

It places the emphasis on quality instead of on quantity, making the oil business a merchandising enterprise and taking oil marketing out of the peddling class.

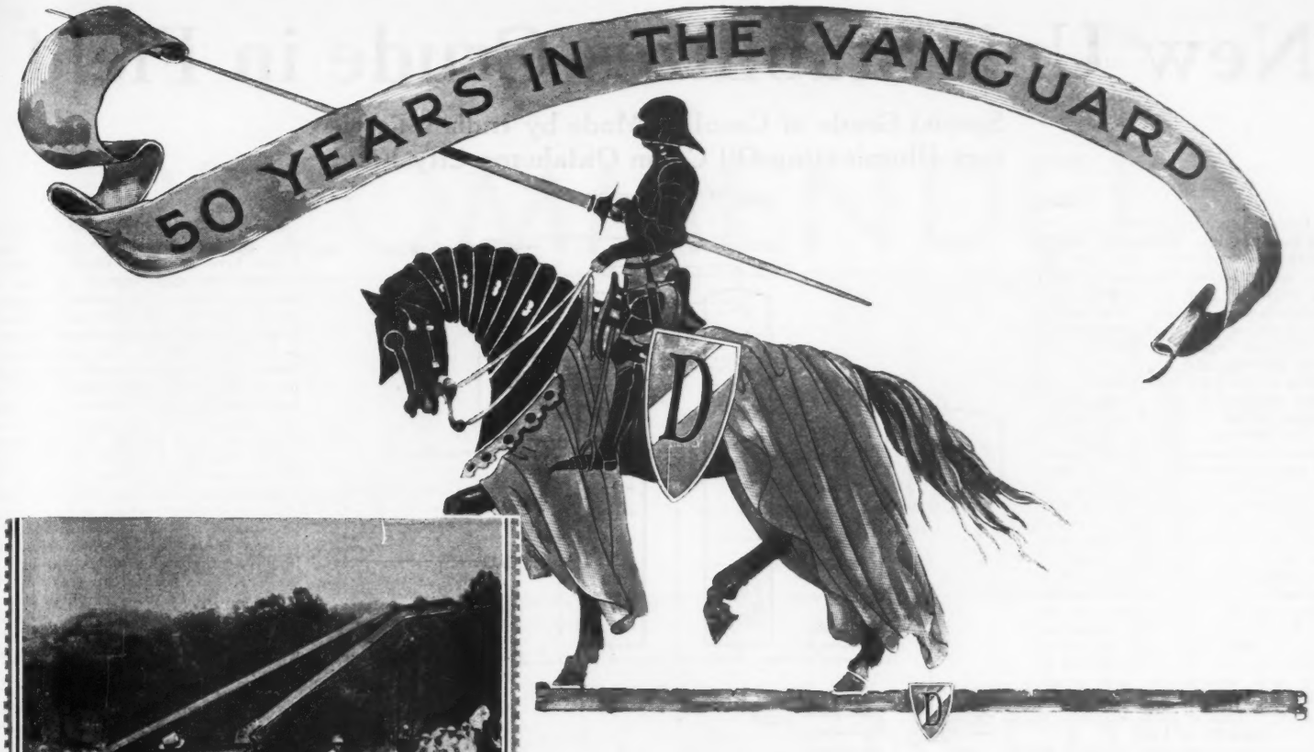
The rapid growth of quality buying among motorists has been brought about by practical demonstration of superior quality in premium fuels. Consumers have convinced themselves that it was worth the additional price.

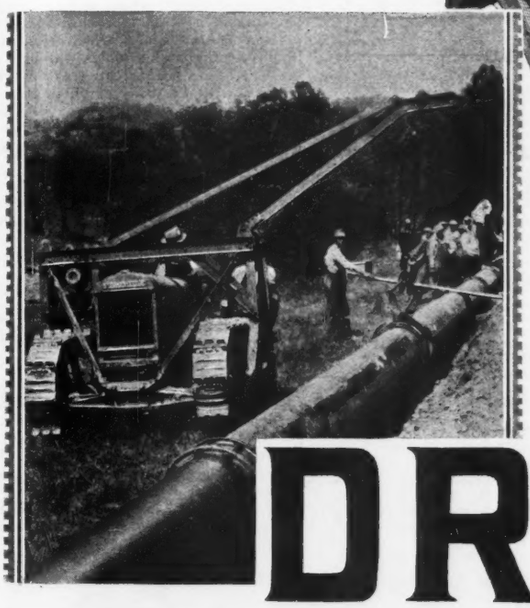
In that respect it is not only better for the industry but better for the industry's customers. They know they are getting a superior product and are so well satisfied with it they willingly pay more to get it.

For the industry it is a big economic betterment. Abundant raw material and a comparatively easily obtained product have been a handicap to the industry so long as its market could be satisfied with a cheap product. Research in development of a superior product that could be used merely in a competition based on cheapeness and volume of sales would have been making a bad case worse. But the development of a superior product that commanded a premium is a logical economic evolution. It supplies the consumer with a more useful and valuable product, earns the industry a proportionate return and is of general benefit in getting a greater service out of the raw material.

At the same time it establishes a higher standard of merchandising to the advantage of both the consumer and the industry. The buyer is assured of quality and the seller of quality products is protected against sales methods that are built solely on cheapness and volume instead of merit.

The prosperity of an industry is measured by the value it adds to its raw material and the greater return thus earned. The refining industry has been improving its products all the time but without obtaining a corresponding return because, until recently, it had not properly stressed quality to its customers. The time is ripe for an expansion of the campaign of popular education in this direction, and the substitution of value for volume as the goal of salesmanship.





Over 100,000 miles of Dresser coupled pipe lines—mostly in *high pressure* systems—bear contant witness to the fact that Dresser Couplings remain permanently tight.

DRESSER COUPLINGS *Dominate*

1880 S. R. DRESSER MANUFACTURING CO. 1930
BRADFORD. PENNA.

New Unit Stabilizes Crude in Field

Special Grade of Gasoline Made by Indian Territory Illuminating Oil Co. in Oklahoma City Field

By W. T. Ziegenhain

The Indian Territory Illuminating Oil Co. has built a unique distillation unit in the Oklahoma City, Okla. field, for the purpose of reducing abnormally high gravity crude to pipe line gravity and to fractionate drip gasoline. The unit is located at one of the company's gasoline plants but the operation of the two plants is independent.

Because of the high rock pressure and the large amount of gas accompanying production in the Oklahoma City Field, there is a substantial accumulation of what may be termed "casinghead" gasoline or drip gasoline. However, so much crude is contained in the material as evidenced by the amber color, that it may be referred to as high gravity crude. Similarly, the entire oil production from a few wells is abnormally high in gravity, namely from 46 to 52 A. P. I. and instead of running this oil into the pipe lines at the posted price for 40 gravity oil, the company has chosen to recover as a motor fuel, that portion of the lighter fractions which distill off at relatively low temperatures and return the stabilized crude to the pipe line within the gravity range of 38 to 40.

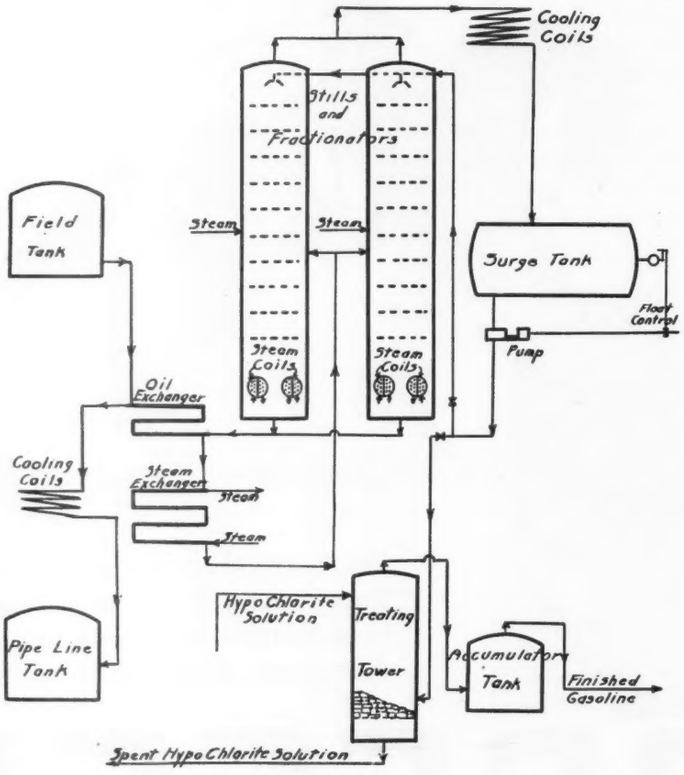
Capacity of Unit

Approximately 10,000 bbls. of the drip gasoline may be run daily in the new unit, or approximately 5,000 bbls. of the high gravity crude, so the operations will be maintained within this range depending upon the character of the oil to be run. In a similar manner, the production of motor fuel will be varied, but the quality of the product is expected to approximate 66 gravity, with an initial of 90 to 100° F. and an endpoint not exceeding 380° F. It will be free of propane, 30 color, color stable and doctor sweet as a result of subsequent processing.

The yield of this quality of fuel will approximate 80 per cent in the case of rerunning the drip gasoline and will approach 30 per cent when processing a 47-48 gravity crude.

Description of Equipment

The equipment essentially consists of two units of a Tulsa type combination steam heated fractionating column, necessary exchangers, and a treating plant. The arrangement of the equipment and the procedure of operation may be more readily followed by referring to the accompanying flow chart.



Flow chart showing method used by the Indian Territory Illuminating Oil Co. at Oklahoma City, Okla., to recover the lighter fractions in abnormally high gravity crude before running it to pipe line storage.

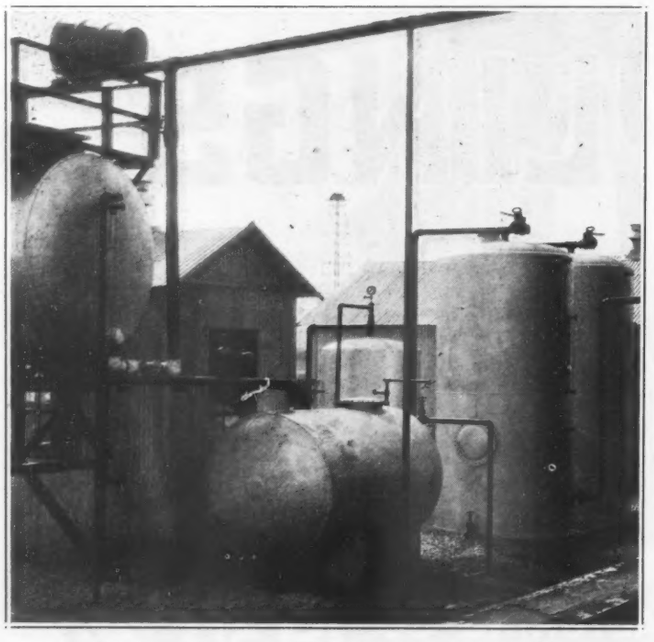
The high gravity crude to be run is segregated in five 10,000-bbl. tanks near the plant termed field tanks. From here the cold crude is pumped through the first series of heat exchangers where it is heated to approximately 150° F. It then passes through a second series of exchangers where it is heated to 350° F. The stream coming from this exchanger is split and half goes to each 7'x35' combination still and fractionating tower. The stream enters each tower above the fourth bubble cap tray and that portion of the charge, which remains a liquid at this point, falls to the base of the tower. In the base of the tower are two bundles of steam heater coils which maintain a temperature of 350° F. in this section. That portion of the crude which remains a liquid after passing down through the series of four bubble cap trays and has mingled with the body of oil in the case of the still, is continuously withdrawn through the first exchanger, giving up its heat to the incoming oil as described previously.

As the stabilized crude leaves the exchanger it ranges in temperature between 100° F. and 150° F. The temperature of the outgoing crude is further reduced by passing it through six sections of Griscom-Russell exchangers set in a Fluor water cooling tower. The temperature of the crude going to the pipe line tanks is thus brought to within five degrees of the wet bulb temperature.

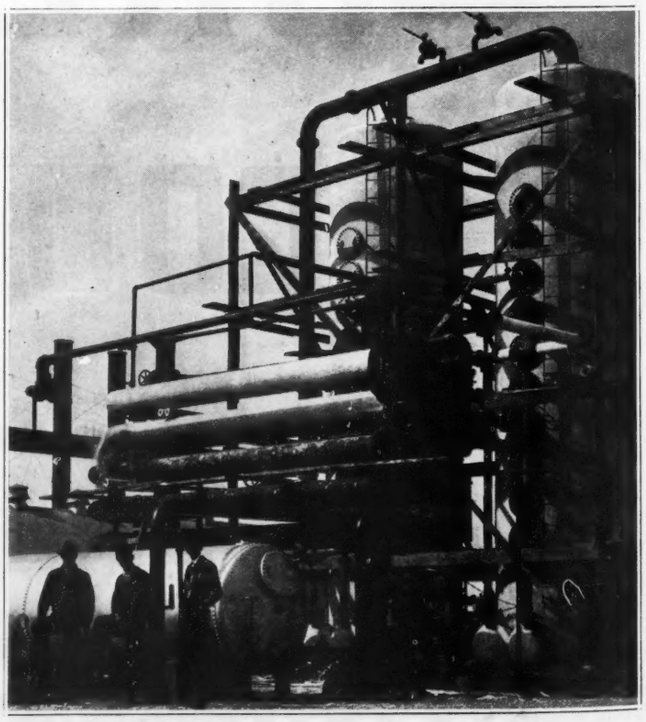
Processing of Vapors

The gasoline vapors which pass from the two towers are run into a common header and then are condensed as they pass through 18 sections of exchangers located in the same cooling tower. The gasoline is segregated in a 10,000-gallon horizontal surge tank equipped with a float control which regulates the amount of gasoline going to the treating plant.

(Continued on Page 148)

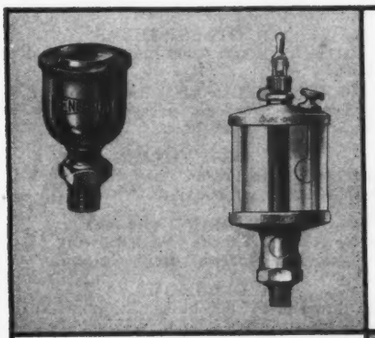


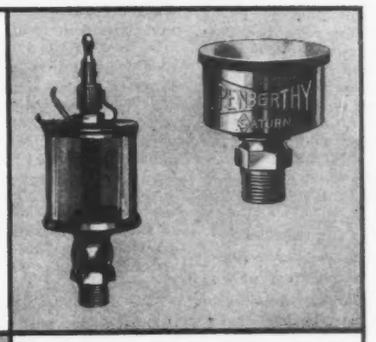
Hypochlorite treating plant used to continuously sweeten the light gasoline. The elevated caustic tank is shown to the left with the two vertical treating tanks on the right. Note the general use of welded tube turns sections in the pipe work.

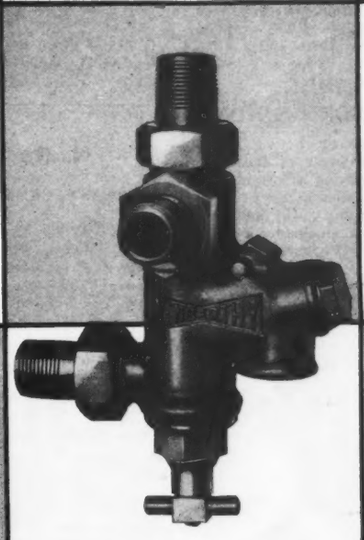


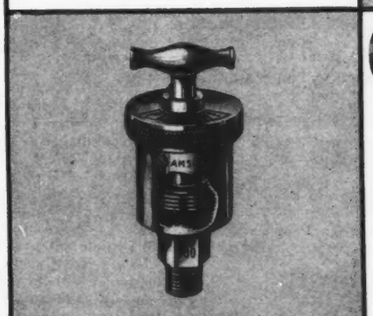
Distillation equipment used to recover a high gravity, low endpoint motor fuel from the lighter fractions of Oklahoma City crude. The two, combination fractionating tower and still are shown in the background, with the oil and steam exchangers shown in the foreground. Near the base of each still may be seen the insulated projection of the two bundles of steam coils.

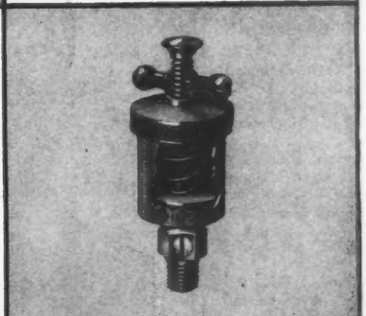
RECOMMENDED BY MANY USERS

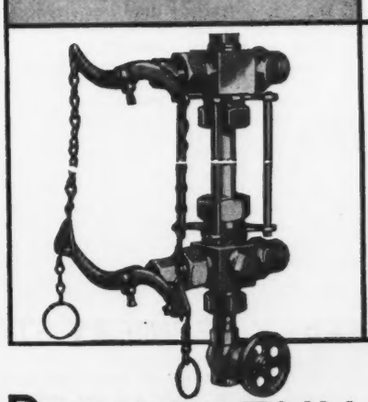








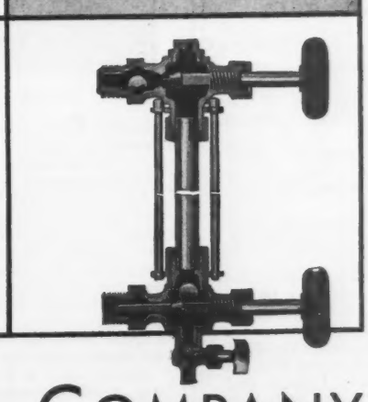




THESE Penberthy Products are universally used throughout the oil industry because they are consistently recommended by operating men who have long been familiar with the Penberthy record for dependable service.

They are stocked by leading supply houses.

PENBERTHY PRODUCTS



PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886

DETROIT

CANADIAN PLANT WINDSOR, ONT.

DRASTIC CUTS IN CALIFORNIA AS RATE COMPETITION CONTINUES

By L. P. Stockman

LOS ANGELES, Calif., Mar. 25.—The past week witnessed a further weakening in the refined oil market accompanied by drastic cuts in the retail price of gasoline and while refiners have not reduced tank wagon quotations the allowance of 2 and 3-cent rebates to resellers is accomplishing the same results. This highly competitive selling of gasoline and resulting reductions in prices has been anticipated for some time, attention having been directed to this probability in The Oil and Gas Journal on several occasions during the past month or more. The tendency on the part of resellers to cut prices on gasoline to consumers is particularly interesting in view of the recent substantial increase in the posted price of light refining crude oil which became effective March 11.

Independent refiners and resellers merchandising gasoline of smaller refiners have been retailing motor fuel at cut rate prices for several weeks but it was not until March 21 that the first major refiner cut the posted price in order to meet competition. The Shell company started the ball rolling when Van Fleet and Durkee who operate the former chain of Shell stations cut the retail price from 19½ cents to 16½ cents. The Texas Company authorized a similar reduction along about the same time. The Standard and Union companies rather reluctant to cut were finally forced to fall into line and those operating the respective chain of stations formerly belonging to this duo posted a price of 17½ cents. Standard Oil stations in southern California are operated by an independent company incorporated as the Southern Gasoline Stations, Inc. Service stations formerly operated by the Union are being operated by a number of individuals most of whom were former service station employes of the company when the decision was reached last year to separate the station business from the company's activities. The T. A. Winter Co., operating former Richfield stations, was the last representative of major refiners to meet competition but was finally forced to make a reduction in order to protect its business.

Major companies have announced several times that they do not expect to reduce the posted tank wagon price which in southern California is 15½ cents a gallon but that they will protect operators who are forced to post reduction in tank wagon prices is quite evident in view of the fact that if this policy was pursued it would result in a coastwise reduction whereas at present price cutting is restricted to areas in which competition is very keen.

Price Cutting Spreads

During the past week price cutting has spread to additional areas. Two weeks or so ago gasoline prices dropped

(Continued on Page 150)

C. R. JOHNSON DIES IN CALIFORNIA HOME

C. R. Johnson, manager of the California district advertising office of The Oil and Gas Journal, died at his home in Los Angeles on Sunday. He had suffered from pernicious anaemia.

Mr. Johnson was 41 years old. He became associated with The Oil and Gas Journal on April 1, 1928, after having served as business manager of Petroleum World for several years.

C. R. Johnson

Mr. Johnson was born in Denver. He was educated in Chicago and was connected with the Chicago Tribune from 1912 to 1918. For two years Mr. Johnson served as western editorial representative of Printers Ink and he then became business manager of the Dartnell Corporation. He moved to Los Angeles in the fall of 1924 when he took the position with the Petroleum World.

Mr. Johnson is survived by his wife, Mrs. Helen Zigler Johnson.

HANKAMER PIPE LINE

HOUSTON, Tex., Mar. 25.—Work has been started by the Gulf Pipe Line Co. on laying an 8-inch pipe line from the new field opened by the Gulf Production Co. at Hankamer, Liberty County, to Sour Lake. The line, which will require about 20 miles of pipe, will connect at Sour Lake with the company's trunk system from North Texas to Lucas, the southern terminus at Spindletop. The line will have a rated capacity of 15,000 bbls. of crude daily.

THE OIL MAN'S CALENDAR

April 5-9—New York, Hoboken, N. J., and Washington, D. C., fiftieth anniversary celebration, American Society of Mechanical Engineers.

April 7—Pittsburgh, Pa., meeting and election, Eastern District, Division of Production, American Petroleum Institute, William Penn Hotel.

April 5-13—Detroit, All American Aircraft Show.

April 7-11—Atlanta, Ga., seventy-ninth meeting, American Chemical Society.

April 7-12—Chicago, annual meeting, American Oil Burner Association, Stevens Hotel.

April 10—Midland, Tex., spring meeting, A.P.I. Division of Production, Southwestern District, Scharbauer Hotel.

April 15-17—Norman, Okla., Gas Measurement Short Course, University of Oklahoma College of Engineering.

April 24-25—Cleveland, Ohio, semiannual meeting, National Petroleum Association.

May 5-8—New Orleans, La., Convention, Natural Gas Department, American Gas Association, Roosevelt Hotel.

May 12-15—Atlantic City, N. J., annual meeting, National Fire Protection Association, Haddon Hall.

May 20-22—Tulsa, Okla., annual meeting, Natural Gasoline Association of America, Mayo Hotel.

May 21-23—Los Angeles, Calif., National Foreign Trade Conference.

June 16-25—Berlin, Germany, World Power Conference.

June 23-26—San Francisco, Calif., Convention, American Railway Association.

June 23-27—Atlantic City, N. J., annual meeting, American Society for Testing Materials.

High Spots in Field News

NORTH LOUISIANA

DeSoto Parish wildcat rated at 2,500 bbls.

EAST CENTRAL TEXAS

Twelfth producer in Van Pool makes 325 bbls. choked.

KANSAS

Proration extended 60 days in Rice County. State production being held level.

CALIFORNIA

Possible new light oil field found on More ranch area, Goleta, Santa Barbara County.

SOUTHWEST TEXAS

Three wells at Darst Creek add 4,000 bbls. Potential production of field estimated 150,000 bbls.

NORTH TEXAS AND PANHANDLE

Gray County proration arguments presented to Railroad Commission. County's production increases 2,000 bbls.

WEST TEXAS

Yates Pool to be curtailed to 110,000 bbls. Penn Pool, Ector County, most active area. Dry hole in Loving County.

ROCKY MOUNTAIN AREA

Big gas well in New Mexico turns to oil, flowing 35 bbls. in 25 minutes. Two wildcat tests planned in Florence Field, Colorado.

OKLAHOMA

State production down to 615,000 bbls. Oklahoma City Field with potential of million barrels held to 64,025 bbls. Wildcats fail to develop anything.

GULF COAST

Three good wells completed at Refugio and one in Sheeks-Esperson Field, western Liberty County. Extensions of deep sand production at Refugio, Barbers Hill, and Humble.

Late Fields

EAST CENTRAL TEXAS

FORT WORTH, Tex., Mar. 25.—Van Zandt County, Pure Oil Co.'s No. 1 Crim, west edge well, Van Pool, is shut down at 3,090 feet with 200 feet of salt water in the hole. It is to be plugged back to 3,037 feet to complete where it formerly produced before deepening to this depth.

NORTH CENTRAL TEXAS

The Sinclair organization, which has been buying half and storing half of the crude oil it has been running from wells in Wilbarger County, has posted a notice on March 22 that it would buy all of the crude it runs. It will not cut the runs, as the Sinclair Crude Oil Purchasing Co. desires the oil for its refinery customers.

GULF COAST

HOUSTON, Tex., Mar. 25.—Three good wells at Refugio and one in the Sheeks or Esperson Field of western Liberty County, were completed at the opening of the week. At Refugio, the best of the three was Independent Oil & Gas Co.'s No. 3 Claude Heard which came in flowing 1,400 bbls. daily of pipe line oil through two five-eighths-inch chokes from sand at a total depth of 3,696 feet. In the same field, Korona Oil Co.'s No. 1 Zarsky, Block 91, came in flowing 700 bbls. of pipe line oil through two nine-sixteenths-inch chokes with a pressure of 45 pounds from sand at 3,699 feet. Houston Oil Co.'s No. 1 Shelton, Block 100, flowed 416 bbls. on a half and a three-eighths-inch choke with pressure of 800 pounds from sand at 3,664-82 feet. At Sheeks, Cranfill-Reynolds Co.'s No. 2 Davis, formerly completed late in February at 2,320 feet flowing 350 bbls., was deepened to 3,306 feet where it was completed Tuesday flowing an estimated 1,500 bbls. of 22 gravity oil.

KANSAS

A new wildcat location was announced and the rig ordered out 1 mile southeast of the Schurr Pool, near Raymond, in Rice County, Kansas. The new location was made by Tatlock and Elwell for No. 1 Loesch, SW cor. NW SE Section 22-20-10w.

Another disappointment came in the Voshell Pool, in McPherson County, when the Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 3 Stuckey, NE cor. NW SW Section 20-21-3w, found water in the Simpson sand at 3,440-49 feet. It is the third test on the east side of the pool to find water and defines the pool to the east.

Phillips Petroleum Co.'s No. 1 Schneider, SE cor. Section 18-12-17w, Ellis County, was drilled deeper and increased its production. The old total depth was 3,442 feet, where it had been making around 40 bbls. a day. It was drilled to a total depth of 3,495 feet, where it swabbed 165 bbls. the first 24 hours.

Shell Petroleum Corp.'s No. 1 Koehn, NE cor. NW NE Section 16-21-3w, McPherson County, swabbed 710 bbls. in 23

(Continued on Page 151)

A.P.I. WEEKLY REFINERY STATISTICS

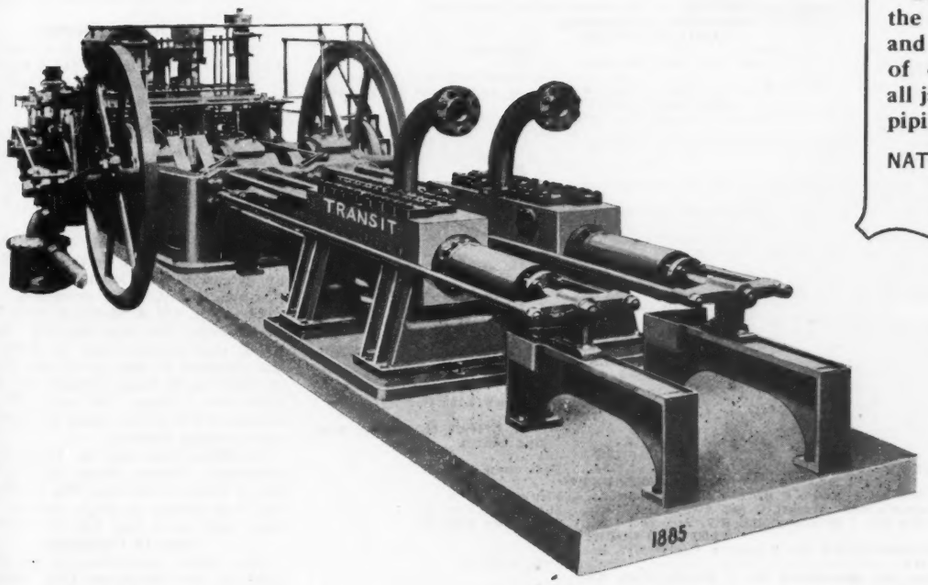
The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks—for the week ending March 22 follows:

	(1)	(2)	(3)	(4)
East Coast	100.0	3,097,100	9,266,000	6,462,000
Appalachian	91.0	565,300	1,828,000	657,000
Indiana, Illinois, Kentucky	99.4	2,147,600	8,202,000	3,024,000
Oklahoma, Kansas, Missouri	89.1	2,087,600	4,583,000	3,505,000
Texas	90.4	4,217,400	7,698,000	11,549,000
Louisiana and Arkansas	96.8	1,189,000	2,522,000	2,064,000
Rocky Mountain	39.6	413,800	3,109,000	1,052,000
California	99.3	4,026,600	16,622,000	108,936,000
Total United States	95.5	17,744,400	53,830,000	137,249,000
Total last week	95.5	17,878,300	53,986,000	137,134,000
Texas Gulf Coast	99.4	.....	6,520,000	8,917,000
Louisiana Gulf Coast	100.0	.....	2,162,000	1,222,000

(1) Per cent refinery capacity represented. (2) Crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.

long stroke

TRANSIT
CRANK & FLYWEEL HOT OIL PUMPS



LONG STROKE

is just one of the factors that has influenced a lot of refinery engineers to decide on Transit Flywheel Hot Oil Pumps.

But the big reasons are the great steam economy and the extreme quietness of operation, eliminating all jar on the cracking coil piping and flanges.

NATIONAL TRANSIT PUMP & MACHINE CO.
OIL CITY, : PENNA.

DISTRICT OFFICES
NEW YORK PHILADELPHIA PITTSBURGH
CLEVELAND HOUSTON TULSA LOS ANGELES

Oklahoma Down to 615,000 Bbls.

Oklahoma City With a Million-Barrel Potential Held to 64,-025 Bbls. Seminole Quiet. Wildcat Tests Develop Nothing

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

The oil production of Oklahoma was near the estimated requirements for the week ending March 22, when the daily average was 615,000 bbls. The decline from the previous week amounts to about 36,000 bbls. a day. Notwithstanding the new wells completed in the Oklahoma City Pool the average daily production from that pool for the same seven days was 64,025 bbls. compared to 85,000 bbls. the preceding week.

For the week ending March 22, Oklahoma completed 79 tests, of which 52 were oil wells, with a total initial production of 107,975 bbls. of oil a day. These wells added to the potential of the State, but many of them were in the Oklahoma City Pool and will be shut in for 65 days under the present proration plans. Nine gas wells were completed with an initial output of 250,000,000 feet and 28 wells were completed as failures.

The Oklahoma City Pool has 11 new wells for the same seven days with an initial production of 91,350 bbls., which is an average of about 8,300 bbls. per well. The average initial production of recent wells completed in the Oklahoma City Pool is lower than had previously been the rule. The Simpson sand wells do not have the large flush production the Silicious lime wells have had. The two gas wells completed in the pool had an estimated flow of 205,000,000 feet of gas.

The potential production of the Oklahoma City Pool is placed at better than 1,000,000 bbls. a day from the 147 completed oil wells. It is estimated that by July 1 the potential production will exceed 1,400,000 bbls.

Seminole County has 17 new completed wells with an initial total production of 12,625 bbls. The dry holes were found in scattered counties through the State.

Each well brings the development of the area south of Oklahoma City nearer the city limits. Several new locations were announced during the week on the east edge of the city. Tom Slick Oil Co. has two new locations in that district: No. 1 Townsend, SE cor. NW, Section 1-11-3w, and another half mile south for No. 1 Foote, SE cor. SW, Section 2-11-3w. Fuller & Warren's No. 1 Holder, SE cor. SW, Section 2-11-3w, was a location. Julian Oil & Royalty Co.'s No. 1 in NE cor. NW, Section 14-11-3w, was also a location. Sinclair Oil & Gas Co.'s No. 8 Vencl, SE cor. NE SE, Section 31-11-2w, in the south end of the pool, was a location.

New producers were added to the Oklahoma City Pool on the north and south sides during the week. Tom Slick Oil Co. and Anderson & Prichard's No. 2 Hoopes, SW cor. NE Section 31-11-2w, in the south end of the pool, was completed and the early gauges showed the well to be averaging 615 bbls. an hour. After being bailed down 800 feet, the well started flowing and made 720 bbls. the first hour. The second hour's gauge was 640 bbls., the third was 561 bbls., fourth 548 bbls., fifth 600 bbls. The gas volume was estimated to be about 15,000,000 feet. The oil is coming from the Simpson sand at a total depth of 6,605 feet. It is the second well completed on the acreage on which six other tests are drilling. It is the north offset to the most southerly producer in the pool to date, Sinclair Oil & Gas Co.'s No. 1 Vencl, in the same section.

Discovery Well Again Producing

On the Trosper Park property on the north side of the pool, Cromwell-Franklin Oil Co.'s No. 7 Trosper Park, SE cor. SW NW Section 13-11-3w, was bailed down 1,000 feet, and mud was blown into the air for 10 minutes until the hole was cleaned. The gas was then blowing out at the estimated rate of 100,000,000 feet a day. It was also estimated the well might be good for 1,500 bbls. of oil a day. The well was shut in completely and no announcement was made as to when the well would be given a production test.

The discovery well of the Oklahoma City Pool, Indian Territory Illuminating Oil Co. and others' No. 1 Fee, C SE SE Section 24-11-3w, was put back on production last week for the first time this year. The well is next to the largest in total recovery. Same company's No. 1 Mable Fuzzel, SW cor. NW Section 19-11-2w, shows the largest total recovery in the pool. The discovery well was opened a few days ago and found to be dead, the gas lift was then installed and the well made 711 bbls. of oil and 4,180 bbls. of water, in 16½ hours.

Sinclair Oil & Gas Co.'s No. 3 School Land-54, NW cor. NE NE Section 36-11-3w, in the south end of the pool, blew in making 185 bbls. the first 15 minutes. The well made 568 bbls. the first hour, and 5,235 bbls. the first 12 hours. The gas was estimated around 10,000,000 feet. Oil was found in the Simpson sand at 6,392-6,561 feet.

Cromwell-Franklin Oil Co. and others' No. 10 Trosper Park, NW cor. SE Section 12-11-3w, on the north side of pool, made 824 bbls. of oil the first hour, and the gas was estimated 14,000,000 feet. The second hour the well made 710 bbls. and the first 12 hours it made 9,015 bbls.

Sinclair Oil & Gas Co.'s No. 1 Stamper, NE cor. SW NW Section 30-11-2w, one of the oldest wells in the pool was shot with 15 quarts and made 80 bbls. of oil in 15 hours and a large quantity of water. The shot was placed in the silicious lime at 6,425-45 feet.

The wildcat test of Tom Slick Oil Co. and others' No. 1 Martin, NW cor. Section 13-13-2w, northeast of the Oklahoma City Pool was swabbed again from a total depth of 6,971 feet, but nothing but water was showing.

Deep Test in Caddo County

The Cement Field is to have a 6,000-foot wildcat test. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp.'s No. 2 Gregory, SE cor. NE SW Section 31-6-9w, Caddo County, has spudded and is expected to test the 6,000-foot level. The test is located in the shallow district of the pool. English Drilling Co.'s No. 1 Melton, C N half SE Section 26-6-10w, Caddo County, on the northwest edge of the field, was shut down at 3,511 feet, with a hole full of water. Another deep test in the field was the C. Kahle and others' No. 1 McKenna, SW cor. NE NW Section 13-6-9w, Caddo County, which was drilling at 4,050 feet, in lime.

Southern Test Work

Other wells in the southern part of state are testing for production and some new wildcats are starting. Venmex Oil Co.'s No. 5 Burk, NW cor. SW, Section 34-1s-8w, Stephens County, is pumping 80 bbls. a day from sand at 2,225-27 feet. Hydrick and others' No. 4 Poole, SW cor. Section 35-1s-8w, Stephens County, was preparing to test an oil showing at 1,920-24 feet. Magnolia Petroleum Co.'s No. 11 Burk, SE cor. SW NE Section 34-1s-8w, was also testing an oil showing at 1,951-61 feet. Empire Oil & Refining Co.'s No. 3 Miller, SE cor. NE Section 5-2s-8w, Stephens County, was drilling deeper. The test is on the south edge of the field. Pace and others' No. 1 Feather, SE cor. NW Section 23-2s-8w, a wildcat 2 miles west of Comanche, was spudding.

In the Palacine Field, Dunmar Oil Co.'s No. 2 Randell, SW cor. Section 10-2s-6w, Stephens County, was bailed in making 54,500,000 feet of gas. The new well is the east offset to the same company's No. 1 Randell, which was recently completed and extended the production in the pool a half mile southeast.

Kanaco Oil Co.'s No. 1 Coffey, NE cor. SE NW Section 25-4s-3w, Carter County, on the west side of the old Healdton Pool, is preparing to spud. Rotary tools will be used to explore the 2,000-foot horizon in the test.

Another new wildcat test is getting under way in Murray County. Chieftain Oil Corp.'s No. 1 Hendrix, SW cor. SE NW Section 27-2-2, about 10 miles north of Sulphur. It is to be a cable tool test and is on a block of about 2,500 acres.

Quiet in Seminole

Seminole area was quiet during the week. In the East Earlsboro Pool, Amerada Petroleum Corp.'s No. 1 Lasley, E half NE NW SW, Section 19-9-6, swabbed 1,265 bbls. from the Wilcox sand at a total depth of 4,135 feet. Gypsy Oil Co.'s No. 1 Taylor, SE cor. NE SW, Section 20-9-6, made 1,385 bbls. from the Wilcox sand, on the gas lift, in 24 hours. Carter Oil Co.'s No. 5 Chowning, SW cor., Section 19-9-6, swabbed 915 bbls. in 18 hours from the Wilcox sand at a total depth of 4,175 feet. In the South Earlsboro Pool, Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Grounds, SE cor. NE NE, Section 22-9-5, flowed 5,050 bbls. under proration.

In the East Little River Pool, Gypsy Oil Co.'s No. 5 Davis, NE cor. SW SE, Section 5-7-7, flowed 1,430 bbls. natural, and 12,000,000 feet of gas from a total depth of 3,161 feet. Three new locations were announced during the week, each a twin to a producing well. Sinclair Oil & Gas Co.'s No. 11 Phillips, NW cor. NE SE, Section 5-7-7, a twin to No. 1 Phillips; Prairie Oil & Gas Co.'s No. 3 Thomas, SE cor. NW, Section 5-7-7; and Gypsy Oil Co.'s No. 7 Payne, SW cor. SE NE, Section 5-7-7, a twin to No. 4 Payne.

The deepest drilling in the Seminole area is Gypsy Oil Co.'s No. 9 N. Barkus, NW cor. SW SW, Section 6-8-6, in the Mission Pool, which was drilling in the Silicious lime at 6,090 feet. Another test in the same pool, is Carter Oil Co.'s No. 2 Micco, NW cor. SE NW, Section 9-6-8, which had the top of the Cromwell sand at 3,185 feet and a show of oil at 3,200 feet, the test was drilling ahead at 3,775 feet.

New Wells in Konawa

The Konawa Pool had few new wells during the week. Sinclair Oil & Gas Co.'s No. 1 Johnson, NE cor. SE NW, Section 17-6-6, flowed 505 bbls. in 24 hours from the sand at a total depth of 2,896 feet. Anderson & Kerr's No. 1 Morgan, SE cor., Section 19-6-6, a mile extension to the southwest, was drilling deeper at 2,974 feet. The well made 7½ bbls. in 12 hours before starting to drill deeper.

Hilton Phillips and others' No. 1 Hyde, SE cor. NE, Section 20-6-6, also an extension was flowing an average of 825 bbls. a day, under proration.

Champlin Oil & Refining Co.'s No. 4 Sachemeche, NW cor. SE SW, Section 9-6-6, was plugged back to 3,040 feet, and swabbed 50 bbls. of oil and 15 bbls. of water in 24 hours. Prairie Oil & Gas Co.'s No. 1 Nora, SW cor. NW NE, Section 9-6-6, is shut down at 3,190 feet, with nothing showing.

A wildcat test west of Asher, in Pottawatomie County, Payne Drilling Co.'s No. 1 Bullock, SE cor. NE, Section 22-6-3, was drilling in green shale at 4,200 feet, carrying a hole full of water.

Shut-In Production

The initial production of the shut-in wells in the Oklahoma City Pool that have been allowed to produce for 24 hours or less as of March 22 was 347,342

(Continued on Page 74)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW, Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE, Sec. 14-24-11w	Rigging up standard tools 4,660 ft.

BECKHAM COUNTY

Ray Johnson and J. R. Cuniff's No. 1 Brower, C NW Sec. 29-10-22w	Rig.
Kay et al's No. 1 Martin, C E half E half NW, Sec. 32-8-24w	T. D. 3,335 ft.; P. B. 1,990 ft.; C. O.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW, Sec. 17-9-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE, Sec. 20-8-22w	Shut down 1,575 ft.

BLAINE COUNTY

Lowen et al's No. 1 Unknown, NW cor. SW NW, Sec. 17-16-11w	Spudded and shut down.
Washoma Oil Co. et al's No. 1 Phillips, C NW SW, Sec. 12-19-10w	Shut down 2,935 ft.

CADDO COUNTY

Abernathy & Brown's No. 1 Horton, SE cor., Sec. 8-6-12w	Shut down 596 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE, Sec. 29-5-12w	Shut down 3,394 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW, Sec. 20-6-1	Drlg. 4,500 ft.
Daniels & LeWright's No. 1 Vandever, C SW, Sec. 15-7-1w	Shut down 3,130 ft.
Phillips Petroleum and T. B. Slick's No. 1 Sudick, NE cor. NE, Sec. 8-10-2w	Wilcox 7,716-20 ft.; water; plugging back.

COAL COUNTY

W. E. McGraw's No. 1 King, C SW NE, Sec. 11-1-8e	Shut down 1,235 ft.

COMANCHE COUNTY

Pelwine Oil's No. 1 Howe, C SE SW, Sec. 33-1-9w	Fishing 1,975 ft.
G. W. Stogner's No. 1 Doebel, C SW SW, Sec. 3-2-9w	Shut down 1,095 ft.
Green et al's No. 1 Wilson, C NE SW, Sec. 14-1-12w	Shut down 4,055 ft.

GARFIELD COUNTY

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW, Sec. 32-23-4w	Drlg. 3,987 ft.
Continental and Barnsdall's No. 1 Brown, CNL SW, Sec. 19-20-4w	Drlg. 5,495 ft.
E. L. Love et al's No. 1 White, SE cor. NW, Sec. 9-24-6w	Shut down 5,566 ft.

(Continued on Page 163)

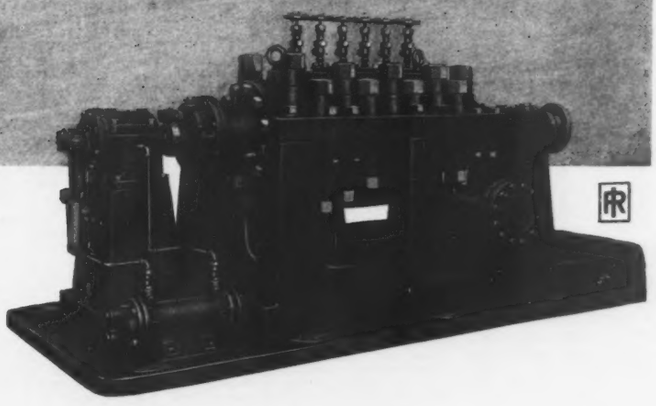
TEAMWORK

A pump that is more than adequate to do the job for which it was selected . . . a manufacturer with a continuing interest in the satisfactory performance of every unit shipped . . . a customer who solves a pumping problem with the best equipment that money can buy . . . . . all work together for the successful accomplishment of the allotted task.

Cameron installations tell just such a story of teamwork.

Cameron Pumps

Ingersoll-Rand Company, 11 Broadway, New York City
A. S. Cameron Steam Pump Works



Holding Kansas Production Level

Proration Extended 60 Days in Rice County. Big Gas Line Project From Stevens County to Eastern Nebraska

By W. A. Spinney
Staff Correspondent, Kansas Fields

Production in Kansas was increased during the week ending March 22 by approximately 300 bbls. daily. The total average production for the State during the seven days was 116,500 bbls.

An important development during the week was the announcement of a new pipe line from the Hugoton gas field in Stevens County to eastern Nebraska. The new gas line will be about 400 miles long and will give a market to the large potential gas reserves in the southwestern part of the State.

Proration Extended in Rice County

Proration of oil production from the Schurr Pool, near Raymond, in southwestern Rice County, Kansas, was extended for a 60-day period from April 1 at a meeting held Friday, March 21, in Wichita. The owners of the four producing wells in the pool also agreed to pinch the wells to 50 bbls. a day until June 1. The area in which no new wells to be started during April and May was extended another half mile in all directions, making the restricted district include all the area within a mile and half of the four producers. J. A. Vickers, president of the Vickers Petroleum Co., is chairman of the Schurr Pool proration committee.

In the Kansas fields, 22 new oil wells were completed during the week ending March 22. These new wells had a total initial production of 9,075 bbls. Five new gas wells were completed with a daily volume of 20,750,000 feet. Fifteen operations were completed as failures. Greenwood County had seven new wells making 1,030 bbls. and one gas well making 500,000 feet of gas; McPherson County, six new oil wells with an initial output of 5,585 bbls.; Rice County, two new wells making 1,395 bbls.; and Cowley County, two wells making 106 bbls. initial production.

The development of the shallow gas sand in the Schurr Pool in Rice County may be undertaken by some of the companies in that area. The shallow gas will be used for fuel during the future development of the pool. The gas is found at a depth of about 1,450-75 feet, and has been found in nearly all the tests drilled in the Schurr Pool. The only drilling well in the area being drilled by Allison & Fitzwilliam Petroleum Co., the No. 1 Metzger, SW cor. SE NE, Section 21-20-10w, found 100,000 feet of gas in shallow sand.

The east side of the Voshell Pool, in McPherson County, was found to carry water when the Gypsy Oil Co.'s No. 1 Stuckey, SW cor. SE NW, Section 10-21-3w, had water in the Simpson sand at 3,530-34 feet. The Texas Company's No. 1 Stuckey, NW cor. NE SW, Section 10-21-3w, the south offset to the Gypsy Oil Co.'s test, also found water in the Simpson sand at 3,539-44 feet, and was rigging up standard tools to drill deeper at a total depth of 3,545 feet.

Production Test in Voshell

A production test was made of the 23 completed wells in the Voshell Pool on March 22 and the total for the pool was 10,305 bbls.

New locations for operations in Kansas show a gradual gain. New operations totaled 22 during the week, with 268 wells drilling in different parts of the state. Notwithstanding the curtailment in the flush areas in some counties exploration is moving along at a steady pace.

McPherson County leads with a total of 65 operations, of which 61 are drilling and 4 locations. Greenwood County is next with 32 operations, 28 drilling tests and 4 locations. Butler County is third with 25 operations. Sedgwick and Sumner Counties were tied, each with 14 operations.

National Refining Co. has announced a new location for a semiwildcat well on a block of 6,000 acres. The test is located 5 miles west of Cassoday, in northern Butler County, and is No. 1 Snively, NW cor. SW Section 25-23-6, and is hoped to find production in the Bartlesville sand. Another test in the county that is rigging up is located southeast of Leon, and is Blakeslee & Wentz's No. 1 Scofield, NW cor. SW SW Section 30-27-7, Butler County.

Sedgwick Developments

E. G. Jones and others' No. 1 Smith & Richardson, is a new test located 349 feet from the south line and 610 feet from the line in the southwest quarter of Section 15-26-2, near the townsite of Greenwich, in Sedgwick County. The same operators' first well was making around 800 bbls. from the chat at 2,906-10 feet. It is located on a 12-acre lease on the east edge of the town and offsets the new test. In the Valley Center Pool, Continental Oil Co. and Gypsy Oil Co.'s No. 10 Hall, SE cor. SW NW Section 7-26-1, made 157 bbls. in 5 hours, and is estimated to be a 400-bbl. well, from the Simpson sand at 3,349-60 feet. The well was plugged back about a foot when water was encountered.

Edwards County Attracts Attention

The Lewis Pool in Edwards County was again attracting attention to the possibilities of that area. Skelly Oil Co.'s No. 1 Johnson, NE cor. SW Section 21-26-17w, has found a showing of gas at 4,540 feet, after drilling out the cement plug. The gas was found in a higher stratum than in the British-American Oil Co.'s well, which is about 6 miles northwest. In the same county, about 2 miles northeast of the British-American Oil Co.'s gas well, the Dixie Oil Co. & Amerada Petroleum Corp.'s No. 1 McCarty, SW cor. Section 22-25-17w, was expected to reach the pay horizon in a few days. The drilling of this test was delayed and slow progress is being made due to the fact that it has been necessary to carry the 8-inch casing for the last few hundred feet. The other test in the same area is the Barnsdall Oil Co.'s No. 1 McCarty, NW cor. NE Section 31-25-17w, an offset to the discovery well of the British-American Oil Co. gas well, which is also expected to be completed in a few days.

Watching Barber County Tests

Three important tests in Barber County were nearing the pay horizon and some are expected to drill into the gas sand in the next 10 days. Barbara Oil Co.'s No. 1 Lanker, SW cor. SE Section 1-33-13w, has drilled out the cement plug and was drilling ahead at 4,600 feet. Phillips Petroleum Co. and Robertson's No. 1 Powell, a wildcat in the eastern part of the county was fishing at 4,023 feet. Skelly Oil Co.'s No. 1 Temple, SW cor. NE Section 13-34-15w, was drilling around 5,250 feet. The test is north of the development in Woods County, Oklahoma, where wildcats have found showings of oil and gas near the 6,000-foot level.

Milmac Oil Co., Morgan & Flynn and others' No. 1 Hohr, C NW Section 11-18-16w, Rush County, which gauged 24,000,000 feet of gas at 3,504-08 feet, may be drilled deeper. Many predict that Rush County will experience a drilling campaign the coming summer.

The Lario Oil & Gas Co.'s No. 1 Nixon, SW cor. NW SW Section 23-27-5, Butler County, had dry and broken Bartlesville sand at 2,750-57 feet, and may be abandoned. The test had a showing of oil in the top of the lime. The test offsets a recent completion of the Empire Oil & Refining Co. which has all the production in the Haverhill area.

Cowley Operations

Another test will be drilled in in the Udall district of Cowley County, by Cameron and Blankinship Petroleum Corp. one location south of the Shell Petroleum Corp.'s No. 1 Sloan, in Section 28-30-3, Cowley County. The No. 1 Sloan, was completed for 165 bbls. in the Hoover sand about three years ago. The offsets to the well were dry and this is the first test since that time to try for an extension. In the Winfield Pool, J. A. Hull Co.'s No. 16, Wallace, in Section 24-32-4, was plugging back to the Bartlesville sand at 2,969-3,047 feet, where a showing of oil was found. The test had been drilled to total depth of 3,440 feet, in the silicious lime and encountered water.

Phillips Petroleum Co. has opened one of its wells in Ellis County, shut in immediately after completion and which has remained shut in for over six months. The well, No. 2 Shutts, SW cor. NE Section 5-12-17w, Ellis County, was given production test during the week and swabbed 100 bbls. the first seven hours. The oil was found in the Gorman horizon at a total depth of 3,400 feet. Same company's No. 1 Shutts, a west offset, is drilling at 2,800 feet.

Stevens County Gas

With the construction of a pipe line from Stevens County, Kansas, to eastern Nebraska, the market for southwestern Kansas gas is not confined to the local area, but may be also piped to northern cities in other states. Missouri Valley Gas Co. owns approximately 325,000 acres of proven and potential gas acreage in Stevens and Morton Counties in Kansas, and in Texas County, Oklahoma. The Missouri Valley Gas Co. plans to deliver 100,000,000 feet of gas daily to the pipe line. The gas in Stevens County centers around Hugoton in the central part of the county, believed to be the largest gas field in Kansas.

Voshell Production Declining?

Production from the Voshell Pool in McPherson County, Kansas, is believed to be declining more rapidly than was indicated when the new potentials were gauged the previous week. The first part of the week 16 wells were gauged and the production was 12,800 bbls. in 24 hours, swabbing each well on bottom, and a few days later the same wells produced only 10,000 bbls. Some early estimates were that the pool might reach 35,000 bbls. potential production. The largest day's actual production from the pool was 18,000 bbls. Under the proration agreement now in effect the Voshell Pool output is limited to 15,000 bbls. per day. Unless some productive extensions are opened the pool is expected to show a steady deecline.

In the Ritz Pool in McPherson County, Shell Petroleum Corp.'s No. 4 Ritz, in Section 1-20-2w, which had a showing of oil in the top of the chat and was later drilled deeper into that formation and found a hole full of water, is temporarily abandoned at a total depth of 3,015 feet. Same company's No. 1 Miller, SW cor. SE, Section 1-20-2w, considered the largest well in the State, went dead early in the week when production was pinched to 50 bbls. a day to restrict production and to comply with the proration plans in the area.

Barber County

Allison & Fitzwilliams' rig is up for No. 1 Kumberg, SE cor. SW SE, Section 2-30-12w.

Chautauqua County

Griffith & Bell's No. 1 Deanrette, CEL NE NW, Section 12-32-10, is drilling at 200 feet. Valentine and others' No. 1 Patterson, NW cor. SE SW, Section 2-33-9, is drilling at 750 feet. Elmwood Oil Co.'s No. 4 Hilton, C SW NE,

(Continued on Page 136)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

BARBER COUNTY

Company, farm and location—	Remarks:
Skelly Oil Co.'s No. 1 Temple Ranch, SW NE Sec. 13-34-15w	Drlg. 5,160 ft.
Robertson et al's No. 1 Powell, SE cor. SE Sec. 11-32-10w	Fishing 4,023 ft.

BARTON COUNTY

Prairie's No. 1 Davidson, NW SE Sec. 4-16-11w	Drlg. 3,175 ft.

BUTLER COUNTY

Joe Liggett's No. 1 Guanther, C SE NE NW Sec. 29-26-7	Spudding.
Martin et al's No. 1 Flanigan, C SW SE SW Sec. 29-27-8	Drlg. 2,807 ft.

CHASE COUNTY

Transcontinental & Cheney's No. 1 Wassel, NE SE Sec. 36-20-9	Drlg. 600 ft.
Urschell et al's No. 1 Lipps, C SW SW Sec. 27-18-6	Drlg. 945 ft.
Steinbuckel et al's No. 1 Stephenson, NE SW Sec. 4-20-6	Fishing 1,435 ft.
Steinbuckel et al's No. 1 Cook, SE cor. Sec. 21-19-8	Drlg. 1,315 ft.
E. W. Marland, Inc.'s No. 1 Altemus, SE NE Sec. 33-18-6	Drlg. 2,750 ft.

CHAUTAUQUA COUNTY

Valentine Oil Co.'s No. 1 Patterson, NW SE SW, Sec. 2-33-9	Drlg. 1,035 ft.

CLAY COUNTY

Chrisler et al's No. 1 Tivier, SW cor. Sec. 19-8-3	Shut down 50 ft.

COWLEY COUNTY

Roth & Farrout's No. 1 Adams, C SW NE NE Sec. 19-32-3	Rig.
Prairie O. & G. Co.'s No. 1 Dosbaugh, SE cor. Lot 27, Sec. 18-32-3	Drlg. 1,385 ft.
Milton & Mead's No. 1 Tatum, SE cor. SW Sec. 11-31-4	Drlg. 2,700 ft.

DICKINSON COUNTY

Emery-Curtis & Bryan's No. 1 Hevner, NW SE Sec. 31-13-3	Spudding.
Cress' No. 1 Sanden, NE cor. Sec. 13-15-2	Rig.
Prairie's No. 1 Rumold, C NW SW NE Sec. 12-16-2	Drlg. 3,143 ft.
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2	Spudding.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4	Drlg. 2,700 ft.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1	Shut down 1,768 ft.

DOUGLAS COUNTY

Steinbuckel's No. 1 Unknown, SW NE NW Sec. 34-14-21	Drlg. 750 ft.
Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17	Shut down 550 ft.

EDWARDS COUNTY

Skelly's No. 1 Johnson, NE SW Sec. 21-26-17w	Drlg. 4,545 ft.
Barnsdall Oil's No. 1 McCarty, NW NE Sec. 31-25-17w	Drlg. 4,180 ft.
Dixie & Amerada's No. 1 McCarty, SW cor. Sec. 22-25-17w	Drlg. 4,270 ft.

(Continued on Page 164)

De Soto Wildcat Rated at 2,500 Bbls.

Flowed 110 Bbls. First Hour. Rankin County, Mississippi, Well Welcomed as First Authentic Showing of Oil in State

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Mar. 24.—Between R. O. Roy's wildcat producer in DeSoto Parish and Gulf Refining Co.'s showing in Rankin County, Mississippi, and additional good wells in Carterville Shreveport has experienced this week a touch of "high life" such as it has not experienced in a long time. Effects of the stimulant are noticeable in the number of old timers who have returned from their migration elsewhere and in a more general sense of better things to come. The town is quite optimistic. The one fly in the ointment is the unexplained behavior of producers in the Zwolle district of Sabine Parish. They all went dead suddenly Monday, stopped flowing, but since have resumed producing, flowing by heads.

Roy's well, No. 1-E Farmer, Section 5-13-13, which made 15 bbls. the hour it was open when last week's report on it was written, was opened for a real test Wednesday and flowed 326 bbls. in the 3½ hours it was held open, through a 1-inch choke in a 2-inch flow line into 4-inch riser to the tanks, of 40 gravity oil, no water, and very little gas, with the drill stem in the hole. Total depth is 2,880 feet with the bottom in 5 feet of sand below 10 feet of broken sand and shale. It is shut in at present until Standard Pipe Line Co. can build approximately 2 miles of 4-inch gathering line connecting with the Oklahoma-Baton Rouge main line.

Meanwhile Roy has derrick up for No. 1 Lee, a 660-foot location in the SW cor., Section 33-14-13, three-quarters of a mile northeast, and Arkansas Fuel Oil Co. is building derrick for No. 1 Scott in the SE cor. NW, Section 32-14-13, and Cosden Oil Co. and Sinclair Oil & Refining Co. are reported to have agents here dickering with Roy for the sale of his entire holdings in this block. Another block he has been building north of Frierson, 6 or 8 miles north of the well, on which he is reported to have made location, is not included in this tentative trade. Arkansas Natural Gas Co., through its oil producing subsidiary, Arkansas Fuel Oil Co., has gone in rather heavily for acreage, and H. L. Hunt, of El Dorado, Ark., an independent, is reported to have bought approximately 400 acres scattered north and east of the well for around $20,000 . Acreage and royalty prices have skyrocketed and there is not much close-in desirable stuff to be had, as Roy had most of it before he started drilling the series of wells resulting in the discovery, which is the seventh. One other, three-quarters of a mile southwest, was a 20,000,000-foot gas well. Another corollary of the discovery is the institution of lawsuits involving title to land adjacent to the well.

The well flowed 110 bbls. the first hour, 96 bbls. the second, 88 the third and about 50 the last half hour, and is rated as a 2,500-bbl. producer. It is 8 feet higher surface elevation than the No. 1 Fuller, the gasser three-quarters of a mile southwest in Section 6-13-13, and 15 feet lower sub-sea.

Mississippi's Well

Gulf Refining Co.'s No. 1 Rainey, Section 13-5-1e, Rankin County, Mississippi, on the southeastern outskirts of Jackson, is the first authentic showing of oil in the state. There is commercial gas in Monroe County and there have been numerous reports of gas showings elsewhere but to date the Gulf's well is the nearest to a real well, either oil or gas, in other territory. As this is written the well is being reamed to set 9-inch casing for a test at 2,510-15 feet whence the show was obtained, amounting to a few barrels of asphaltic oil that tested 10-11 gravity on laboratory runs. As there was much salt water with the oil during the 27 minutes the testing tool was open it is likely the test will not be a well. Its chief value is as an indicator of the possibilities of the Jackson anticline and a guarantee of further exploration.

The immediate consequence is the introduction to the legislature, now in session, of a mass of proposed laws affecting the oil and gas industry ranging from casing regulations to marking containers for petroleum products handled in retail. Most of it is of the ill-considered type with which the industry has had to contend whenever a new state was added to the list of those producing oil and gas. And taxes—don't forget the tax angle. The net effect of the show will be to expedite present and encourage further future exploration. And some of the most conservative operators in this division are not hesitant in expressing the belief that Mississippi will be the next "oil state."

Carterville Area

Carterville operators are getting some satisfaction from activities of two railroads in building spurs into the producing area. Cotton Belt is building 12 miles of track and loading racks in the field, from a siding near Plain Dealing, and Louisiana & Arkansas is building 5 miles from Sarepta. These will afford rail outlets on the east and west ends of the field in addition to Standard Pipe Line Co.'s 4-inch line. Arkansas Fuel Oil Co. completed No. 1 Bollinger, Section 38-23-12, flowing 150 bbls., total depth 2,174 feet, and has three more operations under way. Palmer Corp.'s No. 1 Roberson, Section 26-23-12, pumped 30 bbls. from 2,175 feet, the smallest well in the field so far. A wildcat in Section 3-20-13, C. L. West and others' No. 1 Sentell and Dickson, was a dry hole at 2,215 feet. Location is 3 or 4 miles north of Benton, the parish seat, in a nest of older dry holes. In contrast is H. S. Autrey's No. 1 Smith, Section 26-19-11, 2 miles south of Bellevue production, which tested 4,000,000 feet of gas at 1,835 feet was deepened to 1,950 feet and tested the same amount of gas and an additional 10 bbls. of oil.

Caddo was quiet, reporting one small producer in the old Oil City district, Gulf Refining Co.'s No. 24-A Levee Board, Section 34-21-16, pumping 25 bbls. from 1,830 feet, and Old River Oil Co.'s Dixie wildcat, No. 1 Sibley, Section 15-19-14, pumping 10 bbls. 2,495 feet. They will drill a second well but location has not been given.

Production

Average daily production for week ending March 22:

NORTH LOUISIANA

Caddo, light	9,850
Caddo, heavy	2,680
Homer	3,620
Haynesville	4,620
DeSoto-Red River	3,030
Elm Grove	445
Bellevue	660
Cotton Valley	2,360
Urania	5,410
Pleasant Hill	735
Sarepta	2,715
Zwolle	2,540
Total North Louisiana	38,665
Total previous week	41,995
Difference	3,330

ARKANSAS

El Dorado	3,990
Smackover, light	5,360
Smackover, heavy	41,145
Stephens	910
Nevada County	1,080
Lisbon	1,040
Champagnolle	4,930
Bradley	80
Mount Holly	150
Total Arkansas	58,685
Total previous week	59,245
Difference	560
Both states	97,350
Last week	101,240
Decrease	3,890

Zwolle Field

There were only two completions in Sabine Parish, both in Zwolle. W. G. Gray's No. 1 Bolin in the SE cor. SW NE, Section 31-8-12, came in with 250 bbls. initial from 2,405 feet, unusually

(Continued on Page 130)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA

AVOYELLES PARISH

Company, farm and location—	Remarks—
R. E. Tippett's No. 1 Chateline, NE NE, Sec. 34-1n-3e	Began drlg. Mar. 14; cmtd. 15½-in. 40 ft.

BOSSIER PARISH

Nell & Lanier's No. 1 Biedenharn, SE cor., Sec. 23-21-14	W.O.S.R; 980 ft. oil in hole; T.D. 998 ft; arranging to re-test at 998 ft.
S. P. Lanier's No. 1 Le Rosen, 300 ft. S, 1,000 ft. W, NE cor., Sec. 26-21-14	Derrick.
H. I. Morgan's No. 3 Wetherbee, 4,443 ft. N, 1,120 ft. W, SE cor., Sec. 21-19-11	Began drlg. Mar. 12; cmtd. 10-in. 180 ft; drlg. 1,700 ft.
Walker et als' No. 1 Antrim, NW cor. SE, Sec. 28-22-13	S.D. 3,184 ft.

CADDO PARISH

Calatex O. & G. Co.'s No. 2-A Agres, 1,325 ft. S, 1,304 ft. E, NW cor., Sec. 7-16-16	Derrick.
Magnolia Pet. Co.'s No. 1 Swann, 330 ft. N, 380 ft. W, SE cor. NE SW, Sec. 16-21-14	D.S. test 994 ft; dry; coring.
L. B. Mawk's No. 1 Swann, 440 ft. N, 200 ft. E, SW cor., Sec. 23-21-14	Rigging up.
R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE, Sec. 33-23-16	D.S. test 8-ft. sand 4,479 ft; S.W; S.D. 4,496 ft.
I. N. Pharisa, trustee's No. 1 Oden, NE cor. SE NE, Sec. 16-19-14	S.D. 2,322 ft; topped sand at 2,396 ft; set 6⅝-in; T.D. 2,409 ft.
C. W. Robinson's No. 1 Wilson, 990 ft. S, 330 ft. W, NE cor. SE, Sec. 2-15-16	Drlg. chalk, 1,813 ft.
Triangle Drlg. Co.'s No. 1 Hardy et als, 660 ft. N, 660 ft. W, SE cor. fractional Sec. 18-19-16	Drlg. 1,650 ft.

CATAHOULA PARISH

Lochnager Pet. Co.'s No. 1 Taliaferro, 572 ft. E, 396 ft. S, C, Sec. 26-9-6	S.D. 900 ft.

CLAIBORNE PARISH

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7	S.D. 2,240 ft.
Leue Oil Co.'s No. 1 Taylor, 1,153 ft. S, 360 ft. W. C, Sec. 16-22-6	Derrick.

CONCORDIA PARISH

Joe Man et als' No. 1 Maxwell, C, Sec. 35-3n-8e	S.D. account of high wtr; T.D. 400 ft.

DE SOTO PARISH

Benson Oil Co.'s No. 1 Harris, Sec. 6-16-13	Tested dry; show gas; W.O. 1,650 ft.

(Continued on Page 121)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH—BELLEVUE

Company, farm and location—	Remarks—
R. L. Crook's No. 12 Larkin, 200 ft. N, 200 ft. E, SW cor., Sec. 14-19-11	Location.

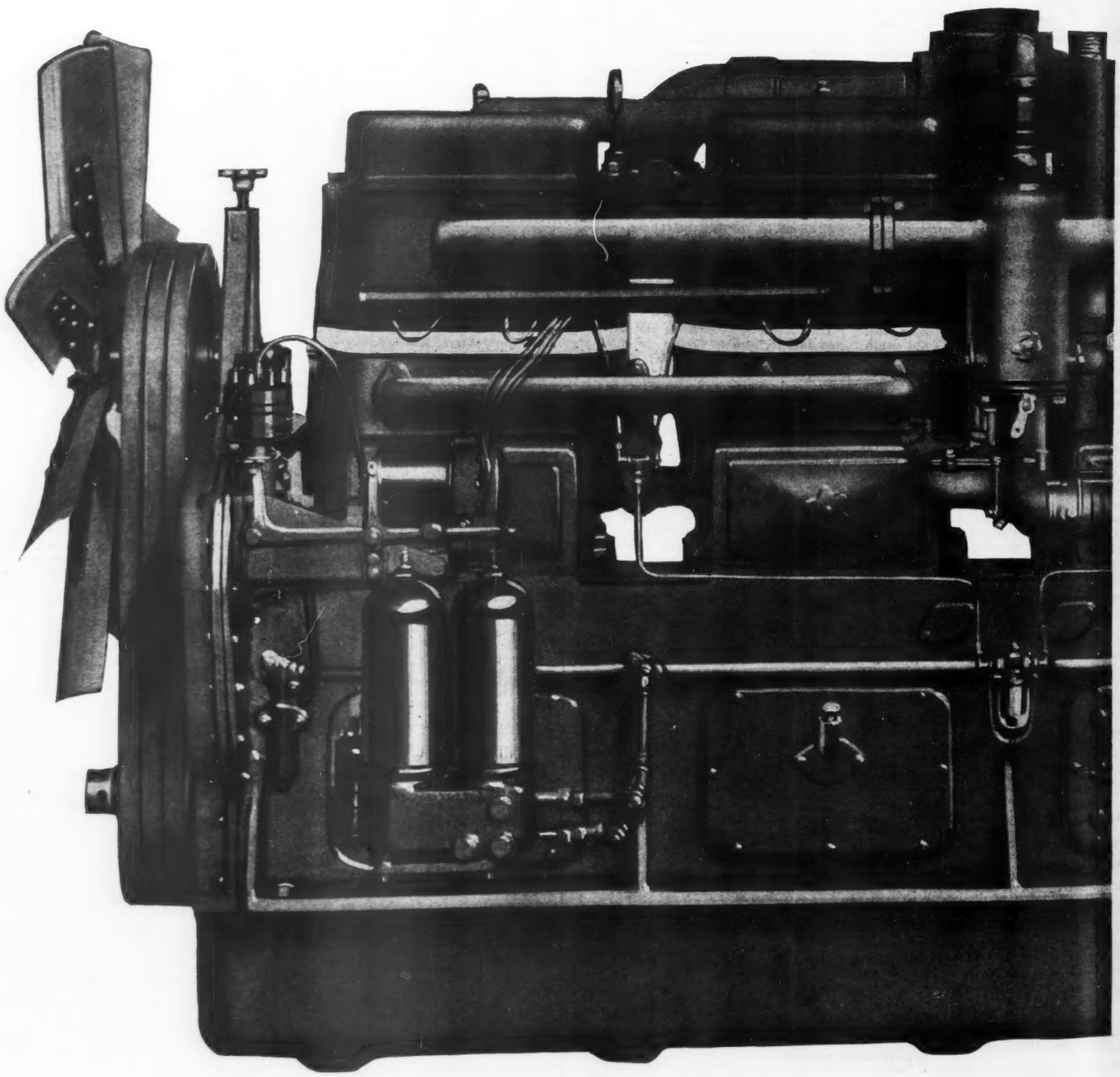
BOSSIER PARISH—CARTERVILLE

Arkansas Fuel Oil Co.'s No. 2 Bollinger, 330 ft. S, 330 Ft. W NE cor. SW SW, Sec. 25-23-11	Rig up.
Ark. Fuel Oil Co.'s No. 3 Bollinger, 1,024 ft. S, 375 ft. W, NE cor. Lot 26, Sec. 38-23-12	Derrick.
Ark. Fuel Oil Co.'s No. 4 Bollinger, 330 ft. N, 330 ft. W, SE cor. Lot 14, Sec. 28-23-11	Derrick.
Bahan & Bahan's No. 1 G. W. May, 660 ft. S, 660 ft. W NE, cor., Sec. 26-23-12	Plugged back 3,180-2,970 ft; waiting cmt. to set.
Bahan & Bahan's No. 1 Floyd Pleasant, 150 ft. N, 150 ft. W, C, Sec. 25-23-12	Rig up.
E. W. Bateman's No. 1 Bollinger, 200 ft. S, 200 ft. E, NW cor., Sec. 38-23-11	Rig up.
E. W. Bateman's No. 2 Bollinger, 200 ft. S, 200 ft. W, NE cor., Lot 29, Sec. 38-23-11	Location.
Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor. Lot 17, in Lot 16, Sec. 31-23-11	Began drlg. Mar. 14; cmtd. 10-in. 265 ft.
Askew & Goodman's No. Roberson, 330 ft. S, 282 ft. W, NE cor. SW SW, Sec. 25-23-11	Began drlg. Mar. 18.
Greenwood Prod. Co.'s No. 1 Bollinger, 1,980 ft. N, 1,150 ft. E, SW cor. SE, Sec. 36-23-12	O.W.D.D. 3,071 ft.; rigging up.
Goodman-Johnson's No. 1 Martin, 330 ft. S, 330 ft. E, NW cor. SE, Sec. 26-23-12	W.O.S.R; T.D. 3,169 ft.
Lee Kinnebrew's No. 1 Garnett, 200 ft. S, 200 ft. W, NE cor. SW NW, Sec. 36-23-12	S.D; repairs 2,900 ft.
Eylers Oil & Gas Co.'s No. 1 Wise, 330 ft. S, 330 ft. W NE cor., Sec. 35-23-11	Derrick.
Lide et als' No. 1 Farrington, 330 ft. N, 330 ft. W, SE cor. NW NW, Sec. 23-23-12	Began drlg. Mar. 13; cmtd. 10-in. 300 ft; drlg. 1,600 ft.
Lide and others' No. 1 Matlock, 2,970 ft. S, 990 ft. E. NW cor., Sec. 26-23-12	Rig up.
Haynes Bros.' No. 1 Martin, Sec. 26-23-12	Rig up.
H. L. Hunt's (was Love et als') No. 1 Allen, SE cor. NE NE, Sec. 30-23-11	D.S. test 2,703 ft; dry; arranging to deepen.
H. L. Hunt, Inc.'s No. 4 J. W. Peyton, Sec. 25-23-12	Cmtd. 6⅝-in. 3,148 ft; drlg. 3,157 ft.
H. L. Hunt, Inc.'s No. 5 J. W. Peyton, 990 ft. W, 330 ft. S, NE cor. SE, Sec. 25-23-12	Location; reported drlg. in error.

(Continued on Page 122)

ANNOUNCING

For Deepwell Drilling; Blue Streak



THE HOLE MAKER

Combustion, 8-Cylinder, 200-225 H.P.

For deep well and rotary drilling, Climax announces this brand new drilling engine—the Hole Maker.

It is conservatively rated at 200 h.p., at 1,000 r.p.m.

For you get the inherent power of 8-in-line 6″x7″ cylinders, plus the efficient combustion that only Blue Streak design can give.

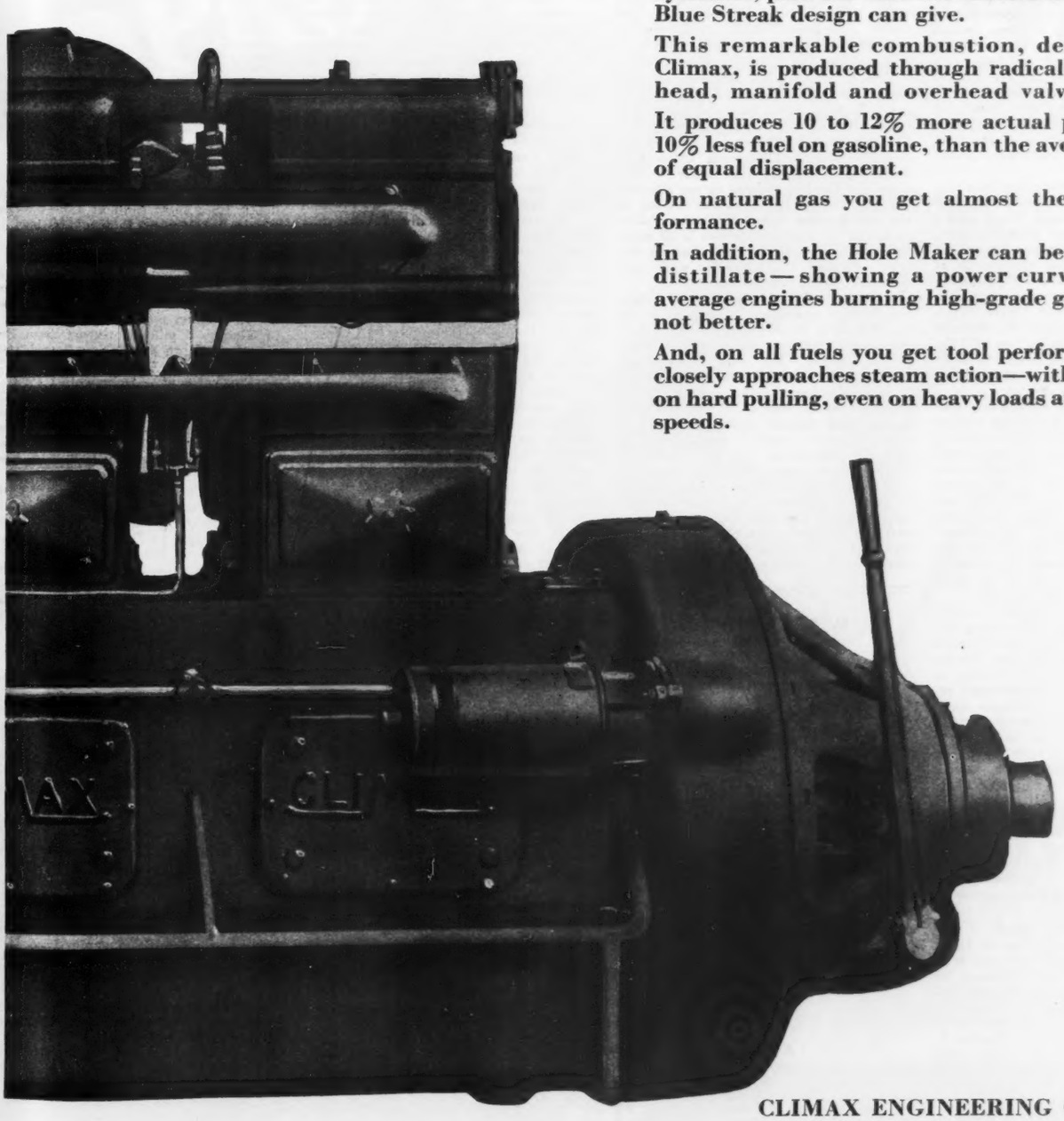
This remarkable combustion, developed by Climax, is produced through radically advanced head, manifold and overhead valve design.

It produces 10 to 12% more actual power, with 10% less fuel on gasoline, than the average engine of equal displacement.

On natural gas you get almost the same performance.

In addition, the Hole Maker can be adapted to distillate—showing a power curve that the average engines burning high-grade gasoline cannot better.

And, on all fuels you get tool performance that closely approaches steam action—with no "ping" on hard pulling, even on heavy loads at low engine speeds.



CLIMAX ENGINEERING COMPANY
76 West 18th Avenue, Clinton, Iowa

CLIMAX Trade Mark Reg. U. S. Pat. Office

Three Darst Creek Wells Add 4,000 Bbls.

Potential Production Estimated at 150,000 Bbls. but Comparison With Joe Bruner Area Suggests Modification

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Mar. 24.—Three wells in the Darst Creek Field completed the past week added 4,650 bbls. to the flush production of the field. The wells were closed in awaiting proration which will take place the last of this week for another 15-day period. By that time additional completions will probably bring the potential production of the field up to close around 150,000 bbls. per day. It is interesting to study the potential of this field with the actual production of the Joe Bruner Field which lies across the river to the northeast of the Darst Creek Field and gives some idea of just how near the potential gauged production of the field comes to the actual production if the wells were all open.

Joe Bruner Field, producing from the Edwards lime at approximately the same depth as the Darst Creek Field, which also produces from the Edwards lime, reached a peak of production at around 50,000 bbls. a day about the middle of last summer with 240 wells producing without restriction as to proration. Ninety-two wells in the Darst Creek Field were gauged the last of February as having a potential production of 135,014 bbls. daily. They are being restricted to produce 11,000 bbls. daily (the figures including the Magnolia wells).

These two fields are so similar, producing from the same formation and at the same depth, that one doubts whether Darst Creek would make on open flow more than 30,000 bbls. if the wells were all opened wide. There is to the advantage of Darst Creek the fact that two of the wells were far bigger than any in the Joe Bruner Field and several others as large as any in the Bruner Field. The potential gauge is probably not a very accurate gauge as to what the field would do if opened wide.

Similarity of the two fields is allowing an opportunity for study along another line and that is as to the ultimate total recovery of the fields. Joe Bruner was allowed to produce full capacity in the old time way. Darst Creek under restricted flow, according to some engineers, is liable to produce much more to the acre ultimately due to the restricted flow which tends to hold back the water.

Late the past week it looked as though the Magnolia Petroleum Co. was likely to get a producing oil well in its No. 1 Roamel which is about 2,000 feet to the northwest of the nearest production. It was in the Austin chalk at 2,317 feet and showing some oil. The well is near the center of the Joel R. Robinson Survey and northwest of the same company's No. 1 Rand Miller.

New Production Added

The three wells completed in the Darst Creek Field the past week were the Gulf Production Co.'s No. 7 Dix-McKean for 450 bbls. on the pump, the Humble Oil & Refining Co.'s No. 4 D. D. Baker for 400 bbls. on the pump, and The Texas Company's No. 4-B Knoblock flowing 3,800 bbls. The United North & South completed its No. 3 P. Roamel at 3,638 feet a dry hole. It had no chalk.

Other completions over Southwest Texas during the past week were of minor importance. Killam-Duggan's No. 13 Cuellar in Zapata County came in flowing at the rate of 200 bbls. and A. L. Edgington's No. 1 Trevino came in for 60 bbls. on the pump. W. E. May got a 50,000,000-foot gas well in the Cole Pool in Well County.

In the Laredo district attention is centered on some tests in the Cole Pool where the Cole Petroleum Co.'s No. 68 has passed up the shallower sands to test for deeper production and at last reports was drilling at 2,600 feet. Magnolia's No. 1 Benavides, located over 2 miles south and a little east of it, got oil at 2,777 feet. O. W. Killam's No. 18 Bruni, located a little over 2 miles west and a little north of the Magnolia's No. 1 Benavides, late last week was drilling at 2,802 feet. These three tests form a triangle in the field that is being watched with interest. The Killam test has passed some producing gas sands, one an entirely new sand for the field at 2,447-59 feet and has had a number of showings.

Efforts over on the banks of the Rio Grande near the town of Zapata to find out something about John Pappas' No. 2 Cuellar have not been entirely successful. The test is at 1,890 feet and flowing gas and salt water. The South Texas Production Co. attempted to make a drill stem test for Mr. Pappas to see whether the gas was coming from the bottom of the hole but the test thus far has failed to locate it. This proposition is 20 miles from any production in the Laredo district. Pappas' No. 1 Cuellar made considerable gas at around 1,300 feet.

National Oil Co. within a few days should have something of interest in its No. 2 Ball in Duval County. No. 1 Ball at around 4,000 feet had a sand with an oil saturation. The only trouble was there was not enough of the sand. No. 2 is some distance to the northwest and late last week was at 3,800 feet and coring what seemed to be rock and at about the depth where it was expected to pick up something. It was moved to the northwest to get higher on the structure with the expectation the sands would be thicker. However, if it does not pick up pay sands the company contemplates carrying the test down to 5,000 to 6,000 feet, making it one of the deepest in this section of the country.

Ten new locations were made in the Laredo district the past week, more than for some time. Two are in the south end of the O'Hern-Seacord Pool. Wilkins Seacord made a location and has derrick up for his No. 1 Benavides, 660 feet from the northwest line and 150 feet from the northeast line of Block 8, Survey 174, and 1,500 feet due south of the Magnolia Petroleum Co.'s No. 1 Benavides and due north of the O'Hern-Seacord gasser in the 2,750-foot sand. The other is Shaw and associates' No. 1 S. Benavides approximately a mile south of the Wilkins Seacord location. E. D. Claggett and Sam Evans have made a location for a test in the Carolina-Texas Pool in Webb County where efforts have lately been successful in developing oil production.

Pettus Area

Features of the Pettus area in Bee County are the Morgan Oil Corp.'s No. 1 Ray, 2 miles southwest of the discovery well, dry and abandoned at 4,500 feet. The Humble Oil & Refining Co.'s No. 1. McKinney, the discovery oil well of the territory, is producing at 3,951 feet. The Houston Oil Co.'s No. 1 Portis, 1 mile southwest of the discovery oil well, is down a little below 3,000 feet and has another week's drilling before it reaches pay depth. Off to the northeast several miles Morgan Oil Corp. and Tidal Oil Co. late last week were down 3,911 feet. It is about a mile north of F. P. Zoch's No. 1 Kaufman which is a gas well at 4,250 feet.

Cosden Oil Co. paid $30,000 cash and is to pay $30,000 in oil if it hits oil, for a 300-acre lease out of the McKinney land in the Pettus area in the John Page Survey. Leases have been in strong demand all through the Pettus area for some time and are continuing so. There are some new tests starting offsetting the two oil wells of the field and which are nearly sure to make producers and in spite of the Morgan dry hole southwest of the field there is every indication of a big producing area in that part of the country and operators are making every effort to get in.

SOUTHWEST TEXAS

Branyon	20
Buchanan	33
Bruner	23,874
Dale	350
Darst Creek	15,225
Kingsville	137
Larremore	102
Luling	9,763
Lytton Springs	853
Manford	530
McMullen	40
Medina	22
Mirando	8,255
Pettus	662
Somerset	1,566
Star County	20
Taylor	537
Yoast	680
Total Southwest Texas	62,669
Week ending March 15	62,839
Decrease	170

COMPLETIONS

Jennings Pool—Zapata County

O. W. Killam's No. 20 Cuellar; total depth 1,553 feet; sand at 1,534-53 feet; flowed 1,000 bbls.; flowing 200 bbls. by heads.

Bee County—Pettus Field

Union Producing Co.'s No. 5 George Ray, 1,750 feet southeast line, 250 feet northeast line of survey in the Thomas Anson Survey, northeast offset to No. 1 McKinney, 3 miles northeast from Pettus; total depth 3,975 feet; flowed 2,000 bbls. per day.

Bexar County—Dobrowolski Pool

Swearingen Oil Co.'s No. 1 Fee, 151 feet from north line, 1,174 feet from east line of 100-acre tract in the M. Menchaca Survey, 5 miles southeast from San Antonio; total depth 700 feet; 6 bbls. per day.

Caldwell County—Lytton Springs Pool

Cranfill & Reynolds' No. 1 M. L. Strown, 150 feet from southeast and southwest line of farm in the P. Martinez Survey, 1 mile northwest from Lytton Springs; total depth 1,717 feet (depth corrected); 8 bbls. per day.

Cranfill & Reynolds' No. 2 M. L. Strown, northwest corner of survey in the P. Martinez Survey; total depth 1,839 feet; pumping 5 bbls. per day.

Guadalupe County—Darst Creek

Gulf Production Co.'s No. 7 Dix-McKean, 150 feet from southeast corner of tract (corrected) in the J. R. Robinson Survey; total depth 2,584 feet; pumping 450 bbls. per day. Same company's No. 2 C. Anderson, 450 feet north line, 750 feet east line of tract in the J. C. Darst Survey; total depth 2,569 feet; swabbed 450 bbls. per day.

Humble Oil & Refining Co.'s No. 4 D. D. Baker, 700 feet from east line, 550 feet from north line of tract in the J. C. Darst Survey; total depth 2,584 feet; pumped 400 bbls (corrected from last report). Same company's No. 10-A Denman, 1,100 feet from south line, 1,250 feet from west line of tract in the A. S. Emmett Survey; total depth 2,582 feet; swabbed 800 bbls. per day.

Magnolia Petroleum Co.'s No. 7 Thomas Dix, 450 feet from southwest and northwest lines of a 50-acre tract in the J. R. Robinson Survey; total depth 2,570 feet; 400 bbls. per day.

The Texas Company's No. 4-B Knoblock, 150 feet northwest line, 455 feet southwest line B lease in the J. R. Robinson Survey; total depth 2,580 feet; 3,800 bbls. flowing. Same company's No. 5-B Knoblock, 626 feet northeast of No. 4-B; total depth 2,510 feet; flowing 1,400 bbls. per day. Same company's No. 6-B Knoblock, 300 feet northeast of No. 5-B; total depth 2,535 feet; flowed 1,440 bbls. per day. Same company's No. 2-A Knoblock, 450 feet southwest line, 150 feet south-

(Continued on Page 130)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—	Remarks:
Frontier Oil Co.'s No. 1 Hoffman, 2,122 ft. from E line, 1,550 ft. from S line of tract, in the John Sharp Sur., 3 miles SW from Somerset Field	T. D. 2,065 ft.; drlg. in Anacacho lime.

BASTROP COUNTY

H. C. Cate et al's No. 1 C. L. Lackey, 5,150 ft. NW line, 1,500 ft. SW line of 219-ac. tract, in the Joshua Gray Sur., 2 miles W from Bateman	T. D. 2,120 ft.; drlg. in Taylor marl.
B. L. Batts et al's No. 1 A. A. Alexander, W. M. Eastland Sur., 4,190 ft. to NW line, 1,320 ft. to SW line of Sur.	T. D. 1,320 ft. (corrected depth); shut down.
Abernathy et al's No. 1 A. Aldridge, in the Martha Barker Sur., 2,750 ft. SE and 450 ft. NE of 241-ac. tract or 2,000 ft. SW and 4,500 ft. NW of Sur.	T. D. 2,308 ft.; chalk; dry and abandoned.
Superior Oil Co.'s No. 1 A. Lasher, D. Dykes Sur., 600 ft. to S and W lines of Sur.	T. D. 3,250 ft.; abandoned; dry.

BEE COUNTY

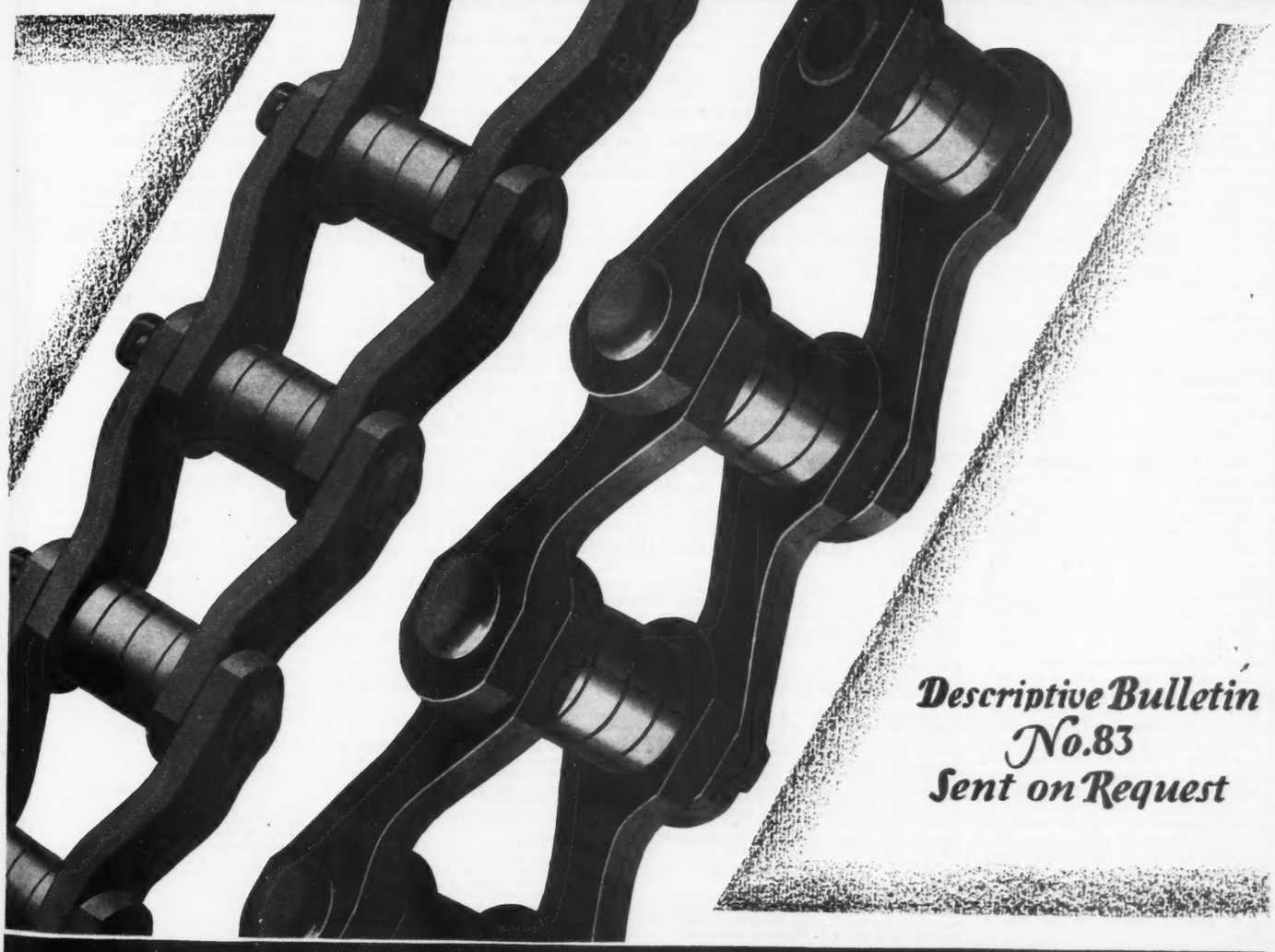
Nichols Oil Corp.'s No. 3 Hicks, 500 ft. N-S line, 500 ft. E-W line of Blk. 19, just S of Normanna, 350 ft. SE of No. 2 Hicks discovery	T. D. 354 ft.; drlg.
Morgan Oil Corp.'s No. 1 Mrs. R. A. McKinney, 350 ft. N of S line, 2,640 ft. W of E line of Mrs. R. A. McKinney tract, in the Ryland C. Ballard Sur.	Drlg. water well.
Ed Price's No. 1 Mrs. Laura E. Weiss, 200 ft. out of NW cor. of B.&B. 640-ac. Sur., E of Normanna, 6 miles W of Blanco Creek, in the B.&B. Sur.	Derrick.
Houston Oil Co.'s No. 1 J. F. Portis 288.3-ac. 1 mile SW of No. 1 McKinney, in the A. Smalley Sur.	T. D. 3,115 ft.; drlg. in sandy shale.
Dr. Bozo & Cooper's No. 1 A. J. Kimbell, C 189 acres, in the Stephen Winship Sur.	T. D. 1,912 ft.; drlg. ahead.
Morgan Oil Corp.'s No. 1 Geo. A. Ray, 2 miles SW of No. 1 McKinney, NW Medio Creek, NE part Geo. Ray 936-ac. tract, in the John W. Williamson Sur.	T. D. 4,345 ft.; drlg. in sandy shale.
The Texas Company's No. 3 Tipps	T. D. 4,100 ft.; abandoned; dry.

BEXAR COUNTY

Burton Oil Co.'s No. 1 P. H. Shook, in the Monjares Sur., 3,150 ft. to E line, 150 ft. to N line of farm, 10 miles SE from San Antonio	T. D. 2,180 ft.; drlg. in Edwards.
Texas Pet. Co.'s No. 3 H. C. Gayle, 700 ft. S of No. 2, Blk. 39, in the C. A. Yoakum Sur.	Location.
Moore-Jauer's No. 1 Holly R. Ellison	T. D. 1,980 ft.; resumed drlg.

(Continued on Page 124)

IDEAL SPIRALOY SPROCKET CHAIN



Descriptive Bulletin No. 83 Sent on Request

THE NATIONAL SUPPLY COMPANIES

Deep Sand Extensions in Gulf Coast

Refugio, Barbers Hill and Humble Yield New Production From Lower Levels. Refugio Production Gains Steadily

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Mar. 24.—Further extensions of deep sand production at Refugio, Barbers Hill and Humble were chief among the developments in the Gulf Coast area the past week. At Lake Barre, Terrebonne Parish, Louisiana, a 2,000-bbl. well was completed, and on the southwest flank of the Pierce Junction Dome, Harris County, the bringing in of a good producer marked a break in the series of disappointments there. New flush production added the past two weeks at Barbers Hill and Humble with continued steady gains at Refugio were reflected in a slight increase in the total daily average production of costal fields during the week.

Refugio, with its daily output steadily being added to, and now above 40,000 bbls. daily, continued the outstanding area of interest on the coast although a slackening of development may be indicated as operations shift into the deep sand area where numerous disappointments and irregularities have been met in the last several weeks. The past week, however, was marked by the bringing in of another good well in the 5,500-foot sand. This was W. L. Pearson's No. 1 Ryals which was completed flowing 1,160 bbls. of pipe line oil daily through a half and a quarter-inch choke from the sand at 5,478-82 feet. This well is an offset to Union Producing Co.'s No. 1 Powers which, although completed as a gas well, has been steadily increasing its oil production, now better than 200 bbls. daily. The latter, because of a pressure of 2,000 pounds, has had to be choked in to the minimum flow. The Pearson well has a pressure of 1,600 pounds, and with a decline in pressure probably will boost its oil flow well above its present estimate.

Seven Deep Sand Producers

The Pearson well is the seventh deep-sand producer at Refugio, all of which now are flowing an estimated 4,500 bbls. daily. Six of these wells are in the 5,500-foot area, the other being Union Producing Co.'s No. 1 M. F. Lambert, which recently found a still lower sand at a total depth of 5,895 feet and which now is making better than 1,700 bbls., pinched in. The latter is approximately 2 miles to the east and north of the nearest wells in the 5,500-foot sand area.

In the vicinity of the Lambert wildcat, two new locations were made during the week, one by the Independent Oil & Gas Co. and the other by T. P. Morgan. The latter is on the St. John tract just south of Union Producing Co.'s Lambert lease, while Independent's location is on a lease just to the east of the Union lease. Both are a considerable distance from the Lambert well as the latter is in the northwest corner of the lease. The Independent location is the farthest east at Refugio, being an east offset to Union Producing Co.'s No. 2 Lambert, which is drilling below 4,500 feet. The latter company also is rigging up for No. 3 Lambert.

In addition to the Pearson producer, the 5,500-foot sand area yielded a gas well in Morgan Oil Corp.'s No. 1 Carlysle, which has a pressure of 1,900 pounds. Three more deep sand failures, however, emphasized the irregularities of the area. These failures included Independent Oil & Gas Co.'s No. 1 T. P. Shelly, which was given up after several attempts to bring it in at a total depth of 5,493 feet; The Texas Company's No. 1 Shelton, dry at 6,050 feet, and Morgan & Morgan's No. 1 Rooke, dry at 5,924 feet. Morgan Oil Corp.'s No. 1 Power, the farthest south of the deep tests, also has failed so far to reveal anything of interest although down 5,400 feet.

In the 3,700-foot sand area Fox & Heflin got a gas well with a 900-pound pressure in their No. 1 Fannie Heard, Block 2, Lot 6. This well, in sand at 3,682-3,700 feet, is spraying some oil. Morgan Oil Corp.'s No. 1 Fox Heirs, Block 70, is flowing 565 bbls. of fluid, 12 per cent water, from sand at 3,677-3,701 feet. Saxet Oil Co. abandoned its No. 3 Holmes Heard after failing to get a well at 3,692 feet.

Good Well at Humble

One of the best wells completed during the week was The Texas Company's No. 1 Atlantic & Gulf on the southeast side of the Humble Dome which came in flowing 115 bbls. hourly through a five-eighths-inch choke from sand and shale at 4,960 feet. Gravity of the oil is 43.8 degrees, and pressure of the well 600 pounds. The well extends deep production several hundred feet toward the north. Thirteen rigs for deep tests now are drilling at Humble representing wildcats and semiwildcats on virtually every side of the dome.

With the exception of linking up of wildcat producers circling the dome, Humble is another Coastal dome which has been proved up for deep production on all flanks. Of significant importance in the deep sand development which has taken production to all sides of the dome is the fact the newer production, unlike that being brought in in many new fields and areas, is holding up steadily and in some cases increasing substantially.

Another Lake Barre Dome Producer

Terrebonne Parish's fifth oil producer and the second on the Lake Barre Dome, one of the group of seven domes in that parish being developed simultaneously by The Texas Company, was brought in Friday flowing 88 bbls. an hour from a sand at a total depth of 3,871 feet. The oil is 27.7 gravity at a temperature of 73 degrees. Four of these seven domes, namely Lake Barre, Lake Pelto, Calliou Island and Dog Lake, have proved commercially productive of oil although the discovery wells on the latter two domes have been abandoned putting these two domes on the unproductive list. The only production on the seven domes now includes one well on the Lake Pelto Dome and two on the Lake Barre Dome.

1,200-Bbl. Well at Pierce Junction

On the southwest side of Pierce Junction, Pure Oil Co.'s No. 2 Herman was brought in Friday flowing an estimated 1,200 bbls. daily on a three-eighths-inch choke. The well by gauge made 728 bbls. in the first 15 hours. Sixty-five feet of screen was set at 4,634 feet. The oil is 32.8 degrees at a temperature of 68 degrees. Development on the southwest side of Pierce Junction has been marked by many disappointments and failures but Pure Oil Co.'s well promises to be a good producer.

Deep Sand Wells at Barbers Hill

Three deep sand wells were added on the southeast side development at Barbers Hill, Chambers County. Mills Bennett Production Co.'s No. 3 Collier, the last addition, is flowing an estimated 1,500 bbls. of pipe line oil from sand at 5,397 feet. Sun Oil Co.'s No. 4 Wilburn fee was completed earlier in the week flowing 1,400 bbls. daily at 5,287 feet. Sun Oil Co.'s No. 4 J. Wilburn is flowing 500 bbls. of fluid, 65 per cent water, daily from sand and shale at 5,314 feet.

Other Completions

Other completions of the week included Gulf Production Co.'s No. 13 Thomas at Fannett, Jefferson County, flowing 1,500 bbls. of fluid, 90 per cent water, 3,911 feet. Humble Oil & Refining Co. and Valley Oil Corp.'s No. 4 Woodley, Raccoon Bend, Austin County, flowed 300 bbls. at 3,469 feet. These operators' No. 7-A Walton flowed at the rate of 123 bbls. at 3,448 feet but now is standing and probably will be put on the pump. Empire Gas & Fuel Co.'s No. 11 Groggan, Liberty, set two joints of screen at 3,556 feet and flowed initially at the rate of 500 bbls. daily. Others were Humphreys Corp.'s No. 1 West-Schenck, Blue Ridge, flowing 700 bbls. of fluid, 93 per cent water, 3,374 feet; Vinton Petroleum Co.'s No. 6 Matilda Gray, Vinton, pumping 100 bbls., 20 per cent water, 2,975 feet, and Sun Oil Co.'s No. 1 Jarman, Clay Creek. 2,000,000 feet of gas, 1,190 feet. Rex Petroleum Co.'s No. 11 Hunter, Edgerly, drilled into salt at 4,068 feet and is being abandoned. In the same field, Strange Oil Co.'s No. 1 Koonce has been abandoned temporarily at 3,774 feet. Word Drilling Co. has abandoned its wildcat, No. 1 E. J. Proctor, west of Hoskins Mound, it being in gumbo and pyrites at 3,115 feet.

Of some interest is Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury, Brazoria County, which has encountered another sand showing oil. This test is in the sand at 4,812-20 feet and has cemented 9⅝-inch casing to test. This test, the first drilled on Shell's new dome prospect in Brazoria County, has been watched closely by operators in view of the showings which have been encountered at various sands, one of which probably would have made a small pumper.

Daily average production of Coastal fields for the week ending March 22 was 205,728 bbls., a new peak for this division. Three main actively developing fields, Refugio, Barbers Hill and Humble, have been responsible for this gain. Figures by fields for the week were:

SOUTHEAST TEXAS

Allen	61
Barbers Hill	25,846
Batson	1,159
Big Creek	2,943
Blue Ridge	1,893
Brenham	110
Boling	1,128
Clay Creek	1,645
Damon Mound	640
DeWalt	10,611
Fannett	1,371
Goose Creek	5,118
Hankamer	30
High Island	1,199
Hull	8,781
Humble	20,332
Jasper County	25
Lost Lake	797
Markham	320
Nash	318
North Dayton	961
Orange	2,508
Orchard	1,981
Pierce Junction	10,137
Port Neches	2,057
Raccoon Bend	10,199
Refugio	40,923
Sheska	1,376
Saratoga	1,001
Sour Lake	2,331
So. Liberty-So. Dayton	5,438
Spindletop	16,391
West Columbia	6,380
Total Southeast Texas	185,909
Week ending March 15	185,276
Increase	633

SOUTH LOUISIANA

Anse La Butte	40
Bayou Blue	70
Bayou Bouillon	1,700
Black Bayou	105
Edgerly	569
Jennings	956
Hackberry	3,056
Lake Barre	213
Lake Pelto	234
Lockport	2,762
New Iberia	6
Port Barre	1,385
Sorrento	93
Starks	422
Sulphur	3,500
Sweet Lake	185
Vinton	3,973
Welsh	182
White Castle	373
Total South Louisiana	19,819
Week ending March 15	18,648
Increase	1,171
Total Gulf Coast	205,728
Week ending March 15	203,920
Increase	1,808

GULF COAST FIELDS AND WILDCATS

Week Ended March 22

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 2 Barber, north side.. Drlg. shale 6,890 ft.
Mills Bennett Production Co.'s No. 7 Barrow, north .... Drlg. shale 5,063 ft.
Mills Bennett Production Co.'s No. 3 Collier ..... Comp. flowing 1,500 bbls. pipe line oil 5,397 ft.
Mills Bennett Co.'s No. 1 Gulf fee ..... Oil sand 5,259-74 ft.; cem. casing 5,217 ft.
Gulf Production Co.'s No. 2-A Wilburn, southeast ..... Drlg. sandy shale showing oil 5,125 ft.
Humphreys Corp.'s No. 1-F Barber, northwest ..... Drlg. shale 4,322 ft.
Humphreys Corp.'s No. 2-C Kirby ..... Drlg. gumbo 1,336 ft.
Humphreys Corp.'s No. 4-H Kirby (workover) ..... Pulling liner to deepen.
Humphreys Corp.'s No. 1 McLean, east side ..... Drlg. sand showing oil 5,325 ft.
Humphreys Corp.'s No. 1 Morgan ..... Drlg. sand and shale 4,320 ft.
Humphreys Corp.'s No. 2 Scott ..... Drlg. sand and clay 626 ft.
McAlbert Oil Co.'s No. 1 Riggins ..... Drlg. sand showing oil 5,317 ft.
Sinclair Oil & Gas Co.'s No. 3 McKinney fee ..... Fishing 2,093 ft.
Sinclair Oil & Gas Co.'s No. 5 Wilburn, southeast ..... Drlg. sand and shale showing oil 4,964 ft.
Sinclair Oil & Gas Co.'s No. 6 Wilburn, southeast ..... Rigging.
Sun Oil Co.'s No. 4 McKinney fee ..... Sidetracking sand 2,030 ft.; total depth 2,118 ft.
Sun Oil Co.'s No. 4 Wilburn, southeast ..... Comp. flowing 1,400 bbls. oil on ½-in. choke 5,287 ft.
Sun Oil Co.'s No. 5 Wilburn fee, southeast ..... Drlg. shale 2,076 ft.
Sun Oil Co.'s No. 6 Wilburn fee, southeast ..... Drlg. sand and boulders 315 ft.
Sun Oil Co.'s No. 3 J. Wilburn, southeast ..... Cem. casing; total depth 5,379 ft.
Sun Oil Co.'s No. 4 J. Wilburn, southeast ..... Comp. flowing 500 bbls. fluid, 65 per cent water, 5,314 ft.
Sun Oil Co.'s No. 5 J. Wilburn, southeast ..... Rig.
F. L. Thompson's No. 2 Wilburn southeast, ... Rig.
Yount Lee Oil Co.'s No. 11 Chambers, south ..... Rig up to deepen 5,550 ft.
Yount Lee Oil Co.'s No. 13 Chambers, south ..... Drlg. shale 4,489 ft.
Yount Lee Oil Co.'s No. 3 Phillips, southeast ..... Drlg. water sand 4,809 ft.
Yount Lee Oil Co.'s No. 6 Woodward, southeast ..... Drlg. shale and lime 4,430 ft.
Yount Lee Oil Co.'s No. 1 Zadie Fisher, southeast ..... Drlg. shale 5,877 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 9-A Deutrich ..... Waiting cement to set 3,289 ft.
Humble & Valley's No. 6 Gotosky ..... Drlg. sandy shale 3,249 ft.
Humble & Valley's No. 3 Helmuth ..... Drlg. sandy shale 3,105 ft.
Humble & Valley's No. 1-B Machamehl ..... Abandoned 3,605 ft.
Humble & Valley's No. 1-C Mitchell ..... Location.
Humble & Valley's No. 7 Payne ..... Derrick.
Humble & Valley's No. 8 Payne ..... Derrick.

(Continued on Page 127)

LARKIN

SHOE WITH CONCRETE GUIDE

Aluminum Reinforced

Concrete Float Collar

ALUMINUM REINFORCED CONCRETE FLOAT COLLAR

The LARKIN ALUMINUM REINFORCED CONCRETE FLOAT COLLAR is an *improved* combination of the Cement and Cast Iron Valve Float Collars, the Cast Iron Valve being replaced by an Aluminum Alloy Shell with a machined water-tight valve moulded within the concrete——shell and valve weighing less than 3 lbs.

Aluminum Alloy is one-third the weight of Cast Iron but has a tensile strength twenty-five percent greater. It is readily pulverized and has a specific gravity less than the mud laden fluid.

A larger valve opening is provided together with four ¼" pipe plugs which can be removed to distribute the weight between the valves when two or more float collars are used.

Concrete reinforced with an Aluminum Alloy Shell is made from quick setting cement and black trap rock having a compressive strength of 8000 lbs.—double the strength of ordinary concrete.

The top of the concrete is provided with water channels, eliminating the possibility of plugging and preventing circulation.

The entire length of the concrete supports the weight of fluid pressure.

* * * * * *

COMPLETE ROTARY HOLE EQUIPMENT

SHOES WITH ALUMINUM GUIDES SHOES WITH CONCRETE GUIDES
COMBINATION FLOAT SHOES WITH ALUMINUM VALVES AND GUIDES
FLOAT SHOES WITH ALUMINUM VALVES AND GUIDES
FLOAT COLLARS WITH ALUMINUM VALVES
ALUMINUM REINFORCED CONCRETE FLOAT SHOES
DRILL PIPE FLOATS
CEMENT DUMP BAILERS

For Sale by Supply Stores

LARKIN PACKER COMPANY

SAINT LOUIS, MO. TULSA, OKLAHOMA

New Mexico's Big Gas Well Turns to Oil

Empire Well Flows 35 Bbls. in 25 Minutes. Mile and Half From Production. Two Wildcat Tests in Florence Area, Colorado

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Mar. 24.—The Empire Gas & Fuel Co.'s No. 1 Closson, in the Eunice area in Lea County, New Mexico, the state's biggest gas well in upper horizons, filled with oil from a lime break at 3,773 feet and flowed 35 bbls. in 25 minutes. It is 1½ miles from the nearest producer in one direction and 2½ miles in another. The Humble Pipe Line Co. is making surveys for a line into the Hobbs area and drilling operations are on the increase. The Empire's No. 2 Lindley in the Jal Pool has 800 feet of fluid, 30 per cent water, in the hole at 3,337 feet, and probably will be plugged back and made into a gas well. The Rector Oil Co.'s No. 1 King, in southwestern Lea County, was abandoned at 4,970 feet. It cut 3,000 feet of salt.

Utah and Idaho operations for the week were routine and revealed no important developments.

Search for sand production in the Florence area in Fremont County, Colorado, is being made in two wildcats drilling north and south of the shale production, one of which is being drilled by P. W. Harr on the Chandler Dome as a structural test with the Pennsylvanian as the objective. The White Eagle Oil & Refining Co.'s Piceance Creek test in Rio Blanco County showed more and wetter gas upon being deepened 18 feet. Several important Colorado wildcats are feeling for the objective sands.

The deep test in Salt Creek in Wyoming is flowing 1,850 bbls. a day 200 feet in the Tensleep and the Mahoney Dome well of the Producers & Refiners Corp. pumped 75 bbls. in 24 hours from the same formation. The Ohio Oil Co.'s second well on the Shoshone Dome in Park County looks as if it will make 100 bbls. a day from the Embar.

NEW MEXICO

Interest in New Mexico operations this week centered in the Empire Gas & Fuel Co.'s No. 1 Closson, NE NW SE, Section 6-22s-36, in the Eunice area in Lea County, which is showing for a producer at a total depth of 3,773 feet. At that depth it encountered a break in the lime and the hole filled with oil. It was then shut in for storage and built up a pressure of 780 pounds to the inch. After standing for four days it was opened up and made a head in which it put 35 bbls. of oil into the tank in 25 minutes. After the head was off, it swabbed at the rate of 5 bbls. an hour. It is barely in the pay and gives promise of improving with deeper drilling. This well commenced spudding a year ago and was delayed for a long time by difficulties in shutting off gas, it being rated as the biggest gas well in that area. The elevation of the well is 3,568 feet and the base of the salt was at 3,060 feet and the top of the brown lime at 3,075 feet. It had 200,000 feet of gas at 3,315-85 feet and at 3,480 feet it made 25,000,000 feet of sulphur gas. At 3,542 feet it gauged 65,000,000 feet and there was an increase at 3,555 feet. At 3,570 feet the flow had increased to 110,000,000 feet a day. After numerous attempts to shut off the gas, this was accomplished and the 6⅝-inch was cemented at 3,737 feet. About 200,000 feet of gas was encountered at 3,737-40 feet and at 3,773 feet the oil came in.

The well is approximately 15 miles southeast of the Lea Pool, 8 miles north and east of the Texas Pacific Coal & Oil Co.'s No. 3 State which came in recently flowing 1,600 bbls., and 20 miles south and west of the Hobbs Pool, all in Lea County. The Empire well is in an area that has given evidences of opening an important pool. About a year ago the Marland Production Co.'s No. 1 Lockhart, NE NW NW, Section 31-31-36, 1½ miles to the northwest of the Empire well, was completed at 3,990 feet and made 278 bbls. the first 24 hours. Two and one-half miles to the northeast, the Gypsy Oil Co.'s No. 1 Ramsey, SW cor., Section 34-21-36, was completed as a 20,000,000-foot gas well at 3,856 feet after plugging back to shut off water. Two and one-half miles to the north and a little to the east is the Continental Oil Co.'s No. 1 A. E. Meyers, NE SW SW, Section 17-21-36, which gauged 1,300 bbls. at a total depth of 4,001 feet. The only other operations in the Eunice area are the Continental's No. 1 William Meyers, SW cor. NW, Section 28-22-36, which is held up at 3,750 feet with a bad fishing job, and the Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, 3 miles to the southeast of the Empire's No. 1 Closson, which is rigged up and laying water lines preliminary to spudding.

Hobbs Area

The Hobbs area in Lea County is showing a pronounced increase in drilling operations. The Hobbs Pool, in which is located the Humble Oil & Refining Co.'s No. 1 Bowers, the biggest well so far completed in New Mexico, still is without pipe line facilities. The Humble Pipe Line Co. is reported making a survey for a line into the area from the south and it is expected that when the surveys are completed, that the company will build. There has been considerable talk to the effect that the Midwest Refining Co. might build a refinery at Hobbs, but it is understood the matter has been confined to an informal and routine discussion and that should any such development take place it will not be in the immediate future. The principal activity is in the vicinity of the Humble's No. 1 Bowers, which is 3 miles to the northwest of the discovery well. The Shell Petroleum Corp. has revived its location in the SW cor., Section 19-18-38, a mile to the northwest of the Humble well, has drilled a water well and is rigging up rotary tools. The Texas Pacific Coal & Oil Co.'s No. 1-G State, SE cor., Section 24-18-37, an offset on the west to the Shell location, is drilling water well and building rig, and the Amerada Petroleum Corp.'s No. 1 McKinley, NW cor., Section 30-18-38, an offset on the south to the Shell location, is a new location. The Ohio Oil Co.'s No. 1 State, NE cor. SW, Section 30-18-38, half a mile west of the Humble well, has rig up and is waiting for orders. The Ohio Oil Co.'s No. 1 State-Northrup, NE NW SE, Section 32-18-38, 1¼ miles southeast of the Humble well and between it and the other producers, is drilling at 1,485 feet in anhydrite with standard tools. The Shell Petroleum Corp.'s No. 1 State, SE SW NE, Section 32-18-38, an offset on the north to the Ohio's State-Northrup, is drilling at 1,124 feet in red rock. The Hobbs High, Inc.'s No. 1 Tatum, NW SW SW, Section 35-18-38, formerly known as Harrison and others, is building standard rig to resume at 275 feet. Cecil Bordages' No. 1 Hughes, C S half, Section 27-19-38, south of production, is bottomed at 4,012 feet and cemented with 25 sacks at 2,812 feet where it had some collapsed pipe. Fisher & Lowrie's No. 1 State, NE cor. NW, Section 11-18-36, west of the Hobbs area, is drilling at 2,695 feet in salt and anhydrite.

Cooper Area

The Texas Pacific Coal & Oil Co.'s No. 4 State, NW NE NW, Section 21-23-36, three-eighths of a mile to the northeast of its No. 3 State, which recently was completed with an initial production of 1,600 bbls. in 24 hours, is building rig. This well is an offset on the south to Cranfill & Reynolds' No. 1-C State, SW SE SW, Section 16-23-36, which is drilling at 3,305 feet in lime with a show of gas at 3,282-92 feet.

Lea Area

The only drilling well in this area is Cranfill & Reynolds' No. 1-D State, SE cor., Lot 6, Section 3-21-33, which is drilling at 2,310 feet in salt.

Tatum Area

A. D. Morton and others' No. 1 State, C NW, Section 32-11-38, is drilling at 4,380 feet in anhydrite.

Maljamar Area

The Maljamar Oil & Gas Co.'s No. 3 Baish, SE NE NW, Section 21-17-32, is moving in.

Jal Area

The Empire Gas & Fuel Co.'s No. 2 Lindley, NE cor. SE, Section 14-25-36, is bottomed at 3,337 feet in lime and mudding off gas behind the 6⅝-inch casing which was set at 3,315 feet. Fluid rose 800 feet in the hole in 8 hours, of which 30 per cent is water and basic sediment. The gas at 3,315 feet was estimated at 34,000,000 feet a day. The hole probably will be plugged back and completed as a gasser. This well is on the same 40 and to the northeast of its No. 1 Lindley which made 2,000 bbls. the first 24 hours. The Humble Oil & Refining Co.'s No. 3 Lindley, NW cor. SW, Section 13-25-36, an offset on the east, which has rig up, may not be drilled at this time.

Southwest Area

The Rector Oil Co.'s No. 1 King, SE NE NE, Section 26-25-32, in the southwestern part of Lea County, is being abandoned at a total depth of 4,970 feet. It had 3,200 feet of sulphur water in the hole at 4,927-52 feet. The salt bed at this location was approximately 3,000 feet thick.

Eddy County
Maljamar Area

Leonard & Levers' No. 2 State, SE cor. NW, Section 21-17-29, is drilling at 2,261 feet in lime and had a small show of oil at 2,120 feet. Flynn, Welch & Yates' No. 2 Stevens, NE SW, Section 13-17-30, is drilling at 2,405 feet in lime, and Henderson, Dexter & Blair's No. 1 Arnold, SE SE, Section 23-17-30, is drilling at 3,615 feet. It swabbed 25 bbls. from the break at 3,465-70 feet and resumed drilling in a dry hole. L. M. Lockhart and others' No. 2 Wooley, NE cor., Section 28-17-30, is drilling at 3,195 feet in hard lime, and the Pueblo Oil Co.'s No. 5 Russell, SW cor. NW, Section 18-17-31, is ready to spud. Henderson, Dexter & Blair's No. 1 Grier, SW cor. NW, Section 21-16-31, is running the 10-inch at 1,760 feet. It bottomed the salt at 1,747 feet.

Chaves County

The Cactus Petroleum Co.'s No. 1 State, SE cor., Section 14-10-26, is drilling at 2,040 feet in lime.

Southwest Area

In the area west of the Pecos River,

(Continued on Page 109)

POSSIBLE SOUTHEASTERN EXTENSION OF SOUTH TURNER VALLEY FIELD

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Mar. 22.—Possibilities of an important southeasterly extension of the South Turner Valley area are indicated by initial wet gas shows encountered in the deep lime by Mill City Petroleums' No. 1, LSD 14, Section 4-19-2w5. Ths test got the lime at 4,510 feet, and is now drilling in the producing horizon with oil-circulating rotary outfit. Gas was met at 4,597 feet, and between 4,625 and 4,650 feet a second show sufficient to blow the drilling oil out of the hole. Back pressure was applied to hold the fluid. Additional gas shows were reported at 152 and 162 feet in the lime, and the test was last reported working in a harder formation just below 4,700 feet.

Section 4-19-2w5 is some miles southeast from the Home producers and on the line of the structure. It corners on Section 8-19-2w5, where Foothills Oil & Gas Co.'s No. 3 is nearly 600 feet in the lime without commercial production and is due north of Section 33-18-2w5, where Sterling Pacific's No. 1 deep test encountered a shale fault after drilling more than 1,200 feet in the lime. Mill City's No. 1 got the lime at a high point, 4,510 feet, and results so far secured correspond very closely with those at Lowery Petroleum's No. 1 which looks like a big producer.

Mill City Petroleums, Ltd., holds the greater part of Section 4-19-2w5. The acreage was tested some 15 years ago by Record Oil Co., which quit what was then considered an exceptionally deep test at around 4,327 feet, with good oil shows in the Dalhousie sand. A few hundred feet of drilling at that time would have carried the test to the lime, and anticipated by eight years Royalite's No. 4 discovery of this horizon. Mill City Petroleums holds some 262 acres in this section, and holds royalty on 260 acres subleased to Mercury Oils, Ltd., and allied interests. Other tests now drilling in this section are apparently logging closely with Mill City's No. 1. No estimate has been made of the wet gas flow already encountered, but it is considerable.

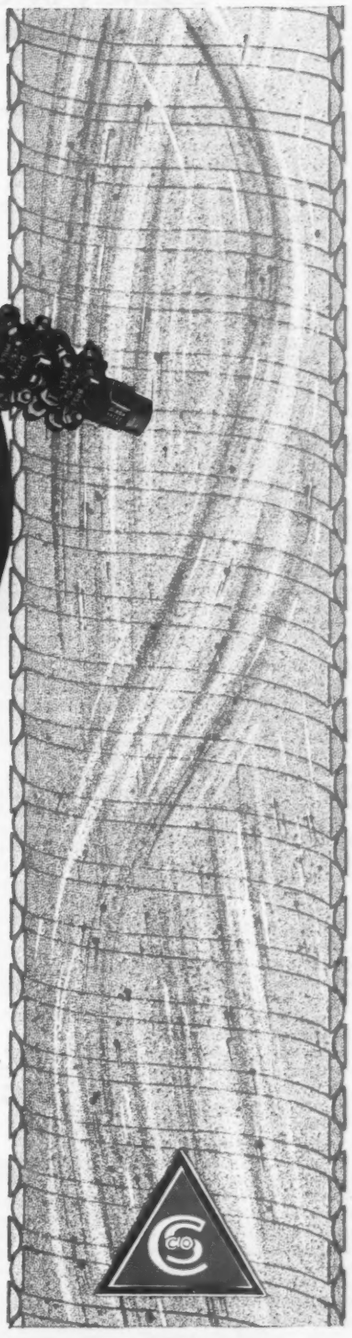
Among the Imperial Oil, Ltd., tests, Sterling Pacific Oil Co.'s No. 1, LSD 15, Section 33-18-2w5, has been shot with 700 quarts. This test after getting the lime at 5,153 feet drilled into shale at 6,436 feet and is now bottomed at 6,525 feet. The shot brought a strong head of gas, which later settled down to less than 1,000,000 feet; but as the hole may have bridged, actual results cannot be determined until it is cleaned out.

In Section 20-19-2w5, Baltac Oils' No. 1, LSD 13, is at 5,874 feet, 346 feet in the lime, and again testing production, a small gas flow being reported. Mayland Oil Co.'s No. 1, LSD 10, Section 17-19-2w5, has finished a long fishing job, recovering lost tubing and is cleaning out to bottom, 6,242 feet.

In the Central Turner Valley, Dalhousie Oil Co.'s No. 7, LSD 11, Section 18-20-2w5, is drilling out cement in the top of the lime at 5,005 feet. Royalite's

(Continued on Page 131)

Resists Biting Wear of SLUSH & GRIT



The tough resilient tube resists the wear of slush, mud and sharp sands. The armor of heavy steel, spot welded, withstands highest pumping pressures and outside wear. The patented ball-joints permit free flexing without reducing internal clearance. For extra deep drilling use the "GSM" Super Rotary Hose. The Boss Tri-Duplex Couplings will not seep, blow off or leak under any pumping pressure.

"If Continental Sells It . . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY
General Offices: ST. LOUIS

THE CONTINENTAL SUPPLY CO., LTD.
224 Traders Building, Calgary, Alberta, Canada

Export Offices: CONTINENTAL EMSCO COMPANY, INC. 74 Trinity Pl. New York—
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2

J451

CONTINENTAL

Possible New Light Oil Field at Goleta

Discovery by General Petroleum Corp. 5 Miles East of Elwood in Santa Barbara County. Flowing 150 Bbls. 45 Gravity

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Mar. 22.—The most important feature in California from a development standpoint during the past week was the probability that the General Petroleum Corp. has discovered a new light oil field in the Coastal area of Santa Barbara County. The potential new field of the General Petroleum is located at Goleta in the More Ranch area about 5 miles east of the prolific Elwood Field and approximately 8 miles west of the Santa Barbara Mesa Field. The discovery well, No. 2 More, came in flowing at the rate of 150 bbls. daily, the oil being clean and testing approximately 45 degrees A.P.I. This new well, which subsequently sanded up, was bottomed at 4,327 feet with a string of 6⅝-inch casing landed and cemented at 4,273 feet. It cannot be stated definitely that the General Petroleum Corp., a subsidiary of the Standard Oil Co. of New York, has actually opened up a new field but there is no questioning the fact that all indications point in this direction.

The More Ranch, or Goleta area, as it has been termed, has been in the limelight for several months due to the tremendous gas pressures encountered during the course of drilling. No. 1 More, the initial wildcat started in this section by the General Petroleum, ran into such high gas pressures several months ago that it was found impossible to proceed with drilling. Work was accordingly suspended on this well and a second hole started. This project, No. 2 More, also encountered heavy gas and a few weeks ago threatened to get beyond control. It will be recalled that the company lost circulation in No. 2 More due to the existence of a fault zone. Within a short time considerable gas began appearing in a number of craters along the fault for a distance of 500 feet. In order to relieve the pressure on No. 2 More at that time the company was obliged to open up No. 1 More. This action focused the attention of operators on the Goleta area as No. 1 More began making about 25 bbls. of high grade oil and approximately 2,000,000 feet of natural gas.

The performance of these two wells is almost conclusive proof that a new light oil field has been discovered at this point. Future development will be conducted along conservative lines due to the fact that the acreage is all held in relatively large blocks thus precluding any possibility of intensive competitive drilling. A check indicates that the General Petroleum controls five tideland drilling permits fronting on the More Ranch with one validation hole drilled to around 1,000 feet on each permit. In addition to these permits, the United States Refining Co. controls permits No. 141, 142 and 143, and the Macmillan Petroleum Co. permit No. 134. A number of other adjoining permits extend all along the beach front for a distance of several miles in both directions but since the limits of production cannot be foreseen it is impossible to venture an opinion as to their potentiality.

Santa Fe Springs

There were quite a number of new wells finished in the Santa Fe Springs Field during the past week but only a few of them registered favorable production. One of these was No. 11 Off of the Bandini Petroleum Co., a subsidiary of the Wilshire Oil Co., which tanked 1,630 bbls. initially from the O'Connell zone at 6,749 feet. No. 239 Santa Fe of the General Petroleum, a former upper zone producer, was another project which registered favorable production upon recompletion during the current week. This well tanked 1,118 bbls. of clean 34.1 gravity oil daily from 6,200 feet. It will be noted that both of these wells were finished above the deep Clarke zone now undergoing intensive development. The Bandini Petroleum did not experience as good success with No. 14 Off finished in the Clarke zone as it did with No. 11, completed in the O'Connell zone, as this project was only good for 345 bbls. daily from the 8,000-foot level.

Altogether the General Petroleum listed six wells for completion this week, although No. 239 mentioned above was the only one to register substantial production. No. 211 Santa Fe, a new well finished in the upper Clarke zone at 7,634 feet, tanked 372 bbls. daily upon completion. No. 161-C, on the other hand, was only good for 52 bbls. daily from the O'Connell zone at 6,525 feet. No. 240 Santa Fe and No. 185-E Santa Fe Community, both finished at 8,000 feet, were brought in doing 160 bbls. and 371 bbls., respectively. No. 143-B, which was also finished in the Clarke zone, tanked 712 bbls. during the first 24 hours following completion at 7,975 feet.

George F. Getty, who will be obliged to reduce his current production approximately 70 per cent in conformity with the temporary injunction issued by Judge Hazlett, finished two new wells during the past seven-day period. No. 35, which has apparently drilled into bottom water at 8,300 feet with a string of 8⅝-inch landed and cemented at 8,172 feet, was good for 15 bbls. of oil cutting 50 per cent water. No. 45 was also a small well upon completion in the Clarke zone at 7,950 feet as it was only good for 220 bbls. of oil cutting 15 per cent. The Richfield Oil Co. successfully completed No. 2 Wardman, a new well in the Clarke zone at 8,090 feet, and it is being listed as doing 258 bbls. daily. The Second Twin Bell Syndicate also chalked up a new well this week when No. 7 Grohs was brought in flowing 416 bbls. daily from the Clarke zone at 8,014 feet. The Universal Consolidated, a subsidiary of the Richfield Oil Co., recompleted No. 9 Blanchard, a former upper zone producer, doing 140 bbls. initially from 7,875 feet, although this project may require further work as current production is cutting approximately 50 per cent. The Wilshire Oil Co. added a new well to its list of producers by finishing No. 5-A Koontz, flowing 812 bbls. per day of 34.6 gravity oil from the Clarke zone at 8,260 feet.

Long Beach

Two wells were successfully finished in the Long Beach Field during the past week, although only one of them registered substantial production. This was the McFarland Syndicate's No. 2 Signal, which came in under a natural flow doing 1,430 bbls. of unusually clean 24.6 gravity oil daily. This new well, which was finished with a 6⅝-inch liner carrying 110 feet of perforated, was completed in the shallow zone at 4,248 feet with an 8⅝-inch water string landed and cemented at 4,138 feet. Bixby & Adams finished their No. 1 Signal at 6,795 feet and completed the hole with a 6¼-inch liner including 225 feet of perforated. This new well made 220 bbls. of clean 28.6 gravity oil on a preliminary production test before being shut in in order to permit the installation of gas lift equipment.

One of the outstanding features in connection with development work at Long Beach is the large number of wells approaching completion. A check indicates that C. L. Anderson's No. 1 Drake, No. 3 Barnes of the Bush Voorhis Oil Co., No. 1 Signal of the Carter Petroleum Co., Commercial Monarch Petroleum Co.'s No. 1 Long Beach, Continental's No. 2 Modoc, No. 3 Del Mar of the Graham & Loftus Oil Co., Otis Hoyt's Nos. 8 and 9, R. W. Jermain's No. 1 Signal, W. F. Myers' No. 6, No. 2 Myers of the Petroleo Syndicate, No. 1 Johnson of the Ring Petroleum, Rio Grande's No. 8 Stanke, No. 1 Fee of The Texas Company., No. 2 Deutcher of the Western Oil & Refining Co. and Nos. 44 and 45 of the Dabney Johnston Oil Corp., are all rotating ahead in the oil sand at present.

Another interesting feature in connection with development operations at Long Beach is the relatively large number of new wells getting under way. A considerable part of the new work getting under way in this field is located out in the extreme eastern and western parts of the district where deep drilling and extension work has indicated the eixstence of commercial production. In the Potrero Field of Los Angeles basin, the Pacific Southwest Development Co. recompleted No. 1 Bergman flowing 600 bbls. of 39.2 gravity oil daily from 5,128 feet. The importance which attaches to the completion of this well lies in the possibility that it indicates the possible existence of a lower productive horizon, although this cannot be definitely determined as the well in question is producing from only 30 feet of sand. The Sun-

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	77,405	172,375
Fuel oil	.....	.....	.....	.....	71,950	.....
Diesel and gas oil	84,568	12,081	208,742	29,820	995,386	480,941
Gasoline	129,603	18,515	568,563	81,223	3,851,488	4,381,970
Naphtha distillate	.....	.....	.....	.....	.....	81,750
Coastwise—						
Crude oil	152,814	21,831	154,080	22,011	3,103,844	6,069,351
Fuel oil	477,618	68,231	432,340	61,763	3,763,799	4,544,390
Diesel and gas oil	108,641	15,520	31,740	4,534	486,730	199,403
Gasoline	100,773	14,396	203,278	29,045	2,178,680	2,357,558
Kerosene	.....	.....	466	65	17,801	3,313
Exports—						
Crude oil	246,982	35,283	142,639	20,377	1,591,327	932,613
Fuel oil	313,023	44,718	284,297	40,614	3,333,905	3,654,781
Diesel and gas oil	141,465	20,209	56,041	8,006	1,249,615	512,999
Gasoline	379,295	54,185	210,073	30,010	3,252,573	1,916,501
Kerosene	98,458	14,065	230,660	32,951	765,162	597,211
Lubricants	.....	.....	.....	.....	5,057	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	88,280	.....
Gasoline	.....	.....	.....	.....	285,245	576,684
Coastwise—						
Fuel oil	44,648	6,378	72,576	10,368	656,492	624,580
Diesel and gas oil	11,690	1,670	8,520	1,217	73,676	182,724
Gasoline	.....	.....	202,845	28,978	968,580	733,993
Kerosene	.....	.....	2,040	291	93,814	24,670
Exports—						
Crude oil	.....	.....	.....	.....	3,075	71,453
Fuel oil	.....	.....	.....	.....	122,143	96,351
Diesel and gas oil	.....	.....	.....	.....	124,540	62,815
Gasoline	94,950	13,564	.....	.....	785,135	969,303
Kerosene	.....	.....	.....	.....	133,749	69,458
Lubricants	.....	.....	.....	.....	.....	13,693

THREE NEW WELLS IN MT. PLEASANT; SAGINAW ONE, AND MUSKEGON NONE

By Special Correspondent

MUSKEGON, Mich., Mar. 24.—Three new wells in the Mount Pleasant Field of central Michigan adding 350 bbls. of initial production, a small 18-bbl. pumper in the Saginaw Field and a dry hole on a wildcat location near the Mount Pleasant Field were the principal developments in Michigan last week as there were no completions in the Muskegon Field.

The Chippewa Oil & Gas Co.'s No. 8 Joslin, NW SW, Section 12-14n-3w, Chippewa Township, Isabella County, was the largest new producer, making 150 bbls. initial in the Dundee, topped at 3,526 feet with pay sands at 3,568-90 feet.

The Pure Oil Co.'s No. 1-B Iosco Land Co., SE SW, Section 1-14n-3w, Chippewa Township, made 100 bbls. initial, striking the Dundee at 3,515 feet and finishing at 3,562 feet.

The Pure company's No. 1-C Raynor, SW SW, Section 1-14n-3w, also made about 100 bbls. initial with Dundee pay sands at 3,548-84 feet.

The Geneva Oil Co.'s No. 1 M. V. Warken, SW SE, Section 8-13-1w, Porter Township, Midland County, was completed as a dry hole at 3,464 feet. It had a show of oil last week at 3,417 feet but struck water at 3,446 feet and was expected to be dry.

These three producers and one wildcat were more than had been completed in the Mount Pleasant area for several weeks due to the curtailment of drilling activities and acceptance of only 75 per cent of the potential production of the field by the Pure Oil Co., only pipe line operator in the field.

The Saginaw Prospecting Co.'s No. 76 George Bruner, NE NE, Section 15-12n-4e, made a 12-bbl. well in the Berea, topped at 1,818 feet and completed 1,838 feet.

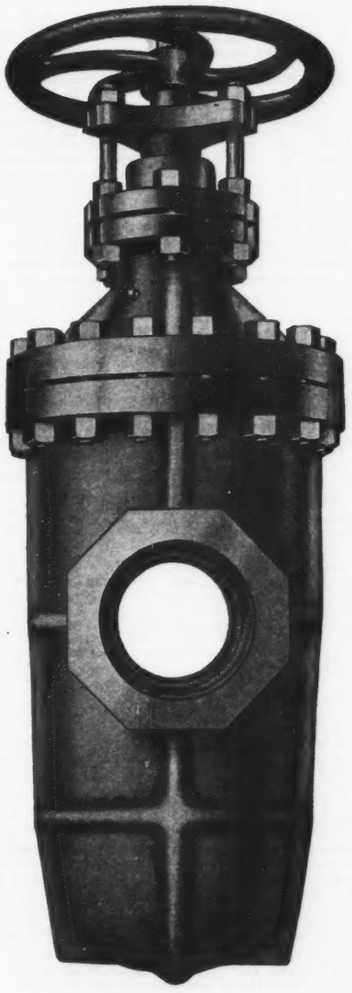
Although there were no completions in the Muskegon Field, operations in general had begun to pick up with about 14 strings of tools working, several wells drilling below the Dundee and others deepening. Negotiations are still under way for the drilling of a real deep test to 5,000 feet.

Newaygo Deep Test

Newaygo County soon will have one of the deepest tests in Michigan, one of eight uncompleted wildcats now drilling in the county northeast of the proven Muskegon Field. The new test is the Atlantic Exploration Co.'s No. 1 Brydges, NW SW, Section 12-11n-13w, Ashland Township, north of Grant, which is drilling in the Salina at about 4,300 feet. Salt was struck about 230 feet above

(Continued on Page 136)

ANNOUNCEMENT



By a mutually satisfactory agreement which became effective January 16, 1930, all contracts are cancelled between the W-K-M Co., Inc., Houston, Texas, theretofore exclusive distributors, and the DeSoto Foundry & Machine Co., Ltd., Mansfield, Louisiana, sole manufacturers of the LAW Conduit Gate Valve. Orders and inquiries received by the W-K-M Co., Inc., are now forwarded to the manufacturers for direct handling.

Hereafter all valves manufactured under the Law patents will bear the trade name LAW.

Authorized distributors are being selected among representative supply houses in various fields. The complete list will be published later.

LAW

CONDUIT GATE VALVE

Price lists have been revised. Address inquiries or orders to any Authorized Distributor or direct to

DeSOTO FOUNDRY & MACHINE COMPANY, Ltd., Mansfield, La.

Authorized Distributors appointed to date—

International Supply Co., Tulsa.
Branches in all principal fields.

Pelican Well Tool & Supply Co., Shreveport.
Branches in El Dorado, Monroe, Lake Charles, Zwolle.

Resistcor Engineering Corporation, Tulsa.
Branches in Houston and Memphis.

J. M. Supply Co., Monroe.

A. V. Simonson, 535 Fifth Ave., New York, N. Y.
Export exclusively.

set Pacific Oil Co.'s No. 2 Inglewood Community is apparently producing from the same horizon although this project is only making 100 bbls. daily from 5,247 feet.

Playa Del Rey

The Playa Del Rey Field of Los Angeles basin is beginning to take on the appearance of a real oil field and, judging by the amount of work getting under way, it should occupy a prominent position in the production column before the current year draws to a close, although the gas law may retard future drilling. The Ohio Oil Co., discoverer of the Playa Del Rey Field, is running four strings of tools at the present time and will probably spud in another hole on the Brown lease in the near future. Drilling charts show the Ohio making hole in No. 2 Recreation at 4,265 feet, in No. 1 Howland at 4,800 feet, in No. 2 Del Rey at 510 feet and in No. 1 Dickinson at 75 feet. No. 1 Recreation, the discovery well, has been standing shut in since February 1. The Union Oil Co. has just spudded in No. 1 Del Rey in the extreme southwestern part of the field and the outcome of work on this hole will be watched with considerable interest because of its structural position. Rig construction was started by three other operators during the past week and locations have been staked for three more. The Featherstone Oil Co. has started building rig for its first well in this area located near Thirty-ninth Street, and drilling operations should get under way some time within the next 15 days. The Burlingham Petroleum and Hurst & Eaton are driving piles preparatory to erecting new rigs within a few hundred feet of the Ohio's discovery well. The Deuel Petroleum has staked a location for a new well in the Silver Strand Tract and the Barnsdall Oil Co. has staked location for No. 1 Burke.

The Union Oil Co. failed to effect a satisfactory water shutoff in No. 8 Rosecrans, a new well in the Rosecrans Field of Los Angeles basin, at 5,970 feet, and it is quite possible that the lower 100 feet will be plugged back as a water witch indicated the existence of water intrusion at 5,900 feet. In addition to testing out this well, the Union spudded in No. 3 Chandler, and satisfactory progress is being made. The Barnsdall has not yet started a second well on the Trust lease where it recently completed No. 1 Trust flowing 1,100 bbls. per day from the Zins zone at 5,940 feet, but additional work will probably be undertaken in the near future. On the O'Dea property, the Barnsdall is rotating ahead in No. 13 at 5,480 feet and this project will probably be listed as an early completion. In the Huntington Beach Field, the Barnsdall is making good progress in No. 1 Borchard, a deep test located in the extreme eastern part of the field adjoining the Standard's Surf lease and, while no evidence of production has been noted from the grass roots down to its present depth, 5,500 feet, this is not in the least discouraging as the area requires deep drilling. The Standard Oil Co. is building rig for No. 12 Thompson, a new well, and it is scheduled for an early spud.

Elwood

The Pacific Western Oil Co.'s well No. 2 on permit No. 92, which was completed in the Elwood Field of Santa Barbara County a week or so ago doing 2,528 bbls. per day from 3,478 feet, has turned out to be one of the largest wells finished in California in several months. Before being beaned back in compliance with the curtailment agreement, this well had built up to 6,420 bbls. of clean 37.2 gravity oil and was making, in addition to the crude, 4,100,000 feet of saturated gas daily. A check of development work under way in this field at the present time indicates the probable completion of several additional wells during the course of the next 60 days. The Bankline Oil Co. is making preparations to bring in well No. 2 on tideland permit No. 89 and this project should be tanking oil shortly. The Barnsdall and Rio Grande have several projects eligible for completion on the Bell Luton and Doty leases as well as No. 2 on tideland drilling permit No. 88 and well No. 1 on tideland drilling permit No. 95. The Elwood Exploration (Honolulu Consolidated) has just started drilling out the cement in well No. 2 on tideland drilling permit No. 90 and this well is also scheduled for early completion. Piles are being driven for Nos. 3 and 4 on this lease and actual drilling should get under way shortly. No. 2 Goleta of the Pacific Western Oil Co. and the same company's well No. 4 on tideland drilling permit No. 92 should also be tanking oil in the near future. A check of present gas production and the amount likely to be added by additional completions indicates the probability that the state will soon seek to enforce the gas conservation law in that area in as much as a large part of the gas produced is being blown into the air. This field has a very low gas-oil ratio but is nevertheless handicapped by the inability to dispose of current production.

Rincon

The Chanslor-Canfield Midway Oil Co. successfully completed No. 6-C Hobson in the Rincon Field of Ventura County this week but the initial pumping, 55 bbls. daily from 2,986 feet, was not especially gratifying. No. 2-A Hobson has become a real deep test for the particular section of the field in which it is located as the bit was rotating ahead a few days ago at 6,599 feet. The formation at this point is logged as a brown shale showing oil. The General Petroleum has abandoned No. 5 Tomson as a duster as 3,716 feet but offset this by logging some oil sand in No. 2 Ferguson, a tideland drilling project at 3,150 feet. In the Summerland Field of Santa Barbara County, George F. Getty successfully finished well No. 21 on tideland drilling permit No. 16, pumping 30 bbls. per day from 1,552 feet. A check of drilling operations in the Ventura Avenue Field reveals a number of new wells nearing completion, with preparations under way to start several more in the near future. The Associated is rigging up Nos. 57 and 96 on the Lloyd lease, while the Shell is getting ready to start Nos. 57, 58, 59 and 61 on the Taylor property in the western part of the field. The Pacific Western Oil Co. has listed No. 1 E. P. Willett for completion as a 200-bbl. well from 7,279 feet. The Petroleum Securities has concluded drilling operations on No. 2 Hartman, located beyond present production in the northeastern part of the field and plans are being made to conduct a production test at an early date. The outlook, however, is not any too encouraging as the 400-foot zone to be tested out at 7,509 feet does not react any too favorably to acetone.

Midway-Sunset

Three new wells and one recompletion were put on production in the Midway-Sunset Field of Kern County during the past week and a check indicates the probable completion of several more in the near future. The Wellington Oil Co. headed the completion list by completing well No. 2 in Section 8-11-23, doing 1,205 bbls. of exceptionally clean 23.4 gravity oil daily from 3,440 feet. The North American Consolidated completed No. 4, a new well on the Kerckhoff lease in Section 8-11-23, pumping 160 bbls. daily from 3,512 feet. In addition to completing this new well, the North American also recompleted No. 1 Kerckhoff, flowing 155 bbls. daily from 4,175 feet. The Standard increased its list of producers in this field by completing No. 9-K Fee, a new well in Section 9-11-23, doing 106 bbls. of clean 22.3 gravity oil daily from 3,659 feet, and preparations are being made to finish No. 5 Fee some time within the next few days. Out in the Maricopa Flats the Barnsdall's No. 2-A Hazelton in Section 17-11-23, finished during the early part of the current month doing 2,275 bbls. of clean 19.2 gravity oil daily from 3,282 feet, has settled down to a steady production of 2,000 bbls. No. 3 Hazelton has just been spudded in by the Barnsdall and should, under the capable direction of Vice President Fortine, secure maximum production. The Doyle Petroleum is working on two potential producers and both of them, No. 7 Son-Crail and No. 4 Weir, should be tanking oil shortly. The Hancock Oil Co.'s No. 4, the Doyle Petroleum

(Continued on Page 136)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Union, No. 1 Buel Canyon, Santa Barbara Co.	X- 7-31	3,965	hd. sd. drilling
Tannehill, L. B., No. 1 Los Olivas, Santa Barbara Co.	23- 7-31	4,395	br. sh. drilling
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	4,302	br. sh. drilling
Universal, No. 1 Point Conception, Santa Barbara Co.	30- 5-34	mtl.	building rig
Ohio Oil Co., No. 1 Lompoc, Santa Barbara Co.	2- 6-34	3,000	hd. sd. drilling
Prairie Oil Co., No. 1 Lompoc, Santa Barbara Co.	15- 7-35	1,070	br. sh. drilling
Fields Gasoline Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	170	sd. drilling
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	....	building road
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	2,880	suspended
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	100 bbls. daily
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	2,653	sd. sh. drilling
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co	20- 4-28	1,019	suspended
Macmillan Pet., No 134 Goleta, Santa Barbara Co.	21- 4-28	175	suspended
Caldwell Brown, No. 1 Goleta, Santa Barbara Co.	24- 4-29	25	suspended
El Camino Oil Co., No. 149 Goleta Tideland, Santa Barb.	22- 4-28	40	suspended
Standard, No. 2 Goleta, Santa Barbara Co.	X- 4-30	3,215	br. sh. drilling
Frazer & Oliver, No. 173 Capitan, Santa Barbara Co.	4- 4-30	101	suspended
McLaine, W. L., No. 175 Capitan, Santa Barbara Co.	4- 4-30	30	suspended
Durkee, R. S., No. 176 Capitan, Santa Barbara Co.	4- 4-30	30	suspended
Oakburn Oil Co., No. 168 Capitan, Santa Barbara Co.	4- 4-30	370	suspended
Oakburn Oil Co., No. 169 Capitan, Santa Barbara Co.	4- 4-30	200	suspended
Oakburn Oil Co., No. 170 Capitan, Santa Barbara Co.	4- 4-30	1,302	25 bbls. daily
Oakburn Oil Co., No. 171 Capitan, Santa Barbara Co.	4- 4-30	300	suspended
Oakburn Oil Co., No. 172 Capitan, Santa Barbara Co.	4- 4-30	325	suspended
Indian Pet., No. 174 Capitan, Santa Barbara Co.	4- 4-30	230	suspended
Shell, No. 1 Rutherford, Santa Barbara Co.	1- 4-31	1,630	hd. sd. drilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	4,260	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	2,325	cleaning out
Standard, No. 1 Casitas, Santa Barbara Co.	26- 4-25	1,383	testing
Continental, No. 1 Carpinteria, Santa Barbara Co.	33- 4-25	4,130	gas well—idle
Continental, Tideland permit No. 121, Santa Barbara Co.	33- 4-25	55	suspended
Continental, Tideland permit No. 122, Santa Barbara Co.	33- 4-25	158	suspended
Continental, Tideland permit No. 123, Santa Barbara Co.	33- 4-25	125	suspended
Continental, Tideland permit No. 124, Santa Barbara Co.	33- 4-25	2,460	deep test
Continental, Tideland permit No. 124-A Santa Barbara Co.	33- 4-25	418	suspended
Continental, Tideland permit No. 125, Santa Barbara Co.	33- 4-25	120	suspended
Continental, Tideland permit No. 126, Santa Barbara Co.	33- 4-25	200	suspended
Continental, Tideland permit No. 127, Santa Barbara Co.	33- 4-25	145	suspended
Continental, Tideland permit No. 128, Santa Barbara Co.	33- 4-25	98	suspended
Continental, Tideland permit No. 129, Santa Barbara Co.	33- 4-25	97	suspended
Exeter Oil Co., Tideland permit No. 163, Santa Barbara	32- 4-25	18	suspended
Getty, Geo. F., No. 120 Carpinteria, Santa Barbara Co.	32- 4-25	68	cemented
Getty, Geo. F., No. 130 Carpinteria, Santa Barbara Co.	32- 4-25	55	cemented
Shell, No. 4 Oxnard, Ventura Co.	36- 2-22	1,420	coring
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,529	fishing
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	2,000	br. sh. drilling
Fennell, E. A., No. 1 Piru, Ventura Co.	13- 4-19	1,460	sd. sh. drilling
General Pet., No. 1 Fillmore, Ventura Co.	6- 3-19	....	location
Associated, No. 1 Rincon, Ventura Co.	19- 4-24	1,400	sd. sh. drilling
Continental, No. 3 Sulphur Mountain, Ventura Co.	21- 4-22	6,520	sd. sh. drilling
Calleguas Synd., No. 1 Camarillo, Ventura Co.	6- 1-20	mtl.	building rig
Milham Expltn., No. 9 Buttonwillow, Kern Co.	8-28-23	4,990	cleaning out
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	706	sd. drilling
Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co.	17-29-24	135	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	1,711	sd. sh. drilling
The Texas Company, No. 1 Edison, Kern Co.	23-29-29	8,221	reaming
Shell, No. 1 Edison, Kern Co.	33-29-29	2,970	hd. sd. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. N., No. 1 Edison, Kern Co.	5-30-29	4,155	will test
Helen Pet., No. 1 Jasmine, Kern Co.	23-25-27	1,550	suspended
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	406	sd. drilling
Currency Pet. Co., No. 1 Jacalitos, Fresno Co.	28-21-14	3,680	sd. sh. drilling
Knudsen, John, No. 1 Jacalitos, Fresno Co.	14-21-14	1,490	suspended
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	7,390	suspended
Fresno Madera Oil Co., No. 1 Clovis, Fresno Co.	18-12-21	4,290	resumed work
Western Gulf, No. 1 Penoche Valley, Fresno Co.	26-15-12	3,660	sd. sh. drilling
Midwest Refining Co., No. 1 Huasna, San Luis Obispo Co.	34-21-15	3,905	cleaning out
Panorama Nat. Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	fishing
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	2,742	cleaning out
Union, No. 1 King City, Monterey Co.	8-22- 8	3,030	br. sh. drilling
Standard, No. 1 King City, Monterey Co.	23-22- 7	3,780	hd. sd. drilling
Pacific Inland Oil Co., No. 1 Parkfield, Monterey Co.	19-23-15	781	cleaning out
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,960	resumed work
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,190	br. sh. drilling
Oceanside Oil Co., No. 1 Kreyenhagen, Kings Co.	32-22-16	300	suspended
Twin State Oil Co., No. 1 Soldani, Mendocino Co.	14-12- 7	2,540	sd. sh. drilling
Barnhart Trust, No. 1 Oakdale, San Joaquin Co.	3- 2-10	2,704	hd. sd. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,020	suspended
Terminal Oil Co., No. 1 Tulare, Tulare Co.	29-20-25	4,198	suspended
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	900	suspended
Getty, Geo. F., No. 1 Chowchilla, Madera Co.	8-10-14	2,100	hd. sd. drilling

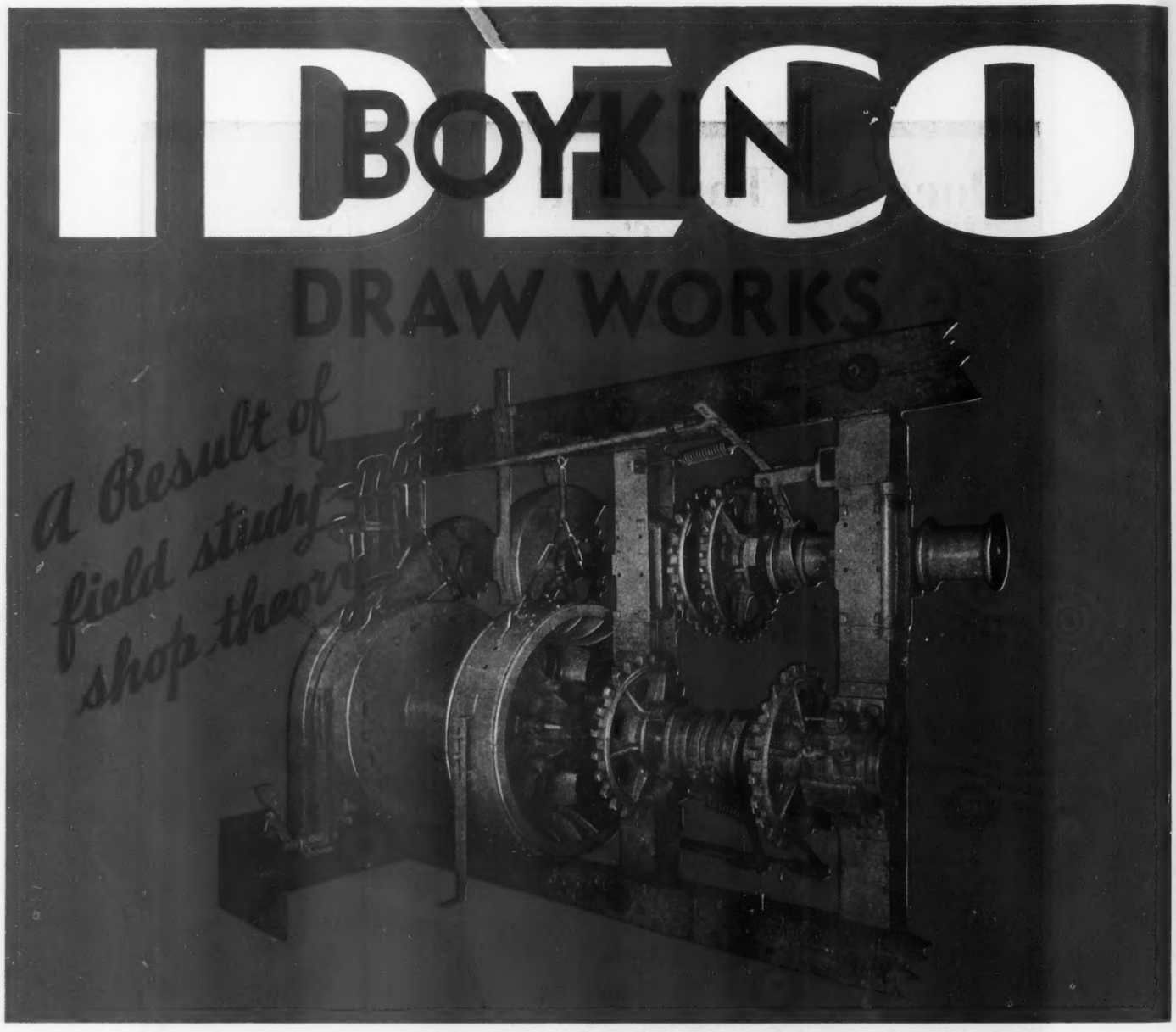
IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Simmel, L. G., No. 1 Inglewood, Los Angeles Co.	21- 2-14	5,380	suspended
Raleigh Oil Co., No. 1 Malibu, Los Angeles Co.	1- 2-19	3,880	suspended
Clearwater Oil Co., No. 1 Bellflower, Los Angeles Co.	21- 3-12	5,150	suspended
Getty, Geo. F., No. 1 Riviera, Los Angeles Co.	27-2-12	4,680	hd. sd. drilling
O'Donnell, J. E., No. 1 Bandini, Los Angeles Co.	16- 2-12	....	location
Burlingham Pet., No. 1 Compton, Los Angeles Co.	17- 3-13	2,680	suspended
Diller, W., No. 1 Watts, Los Angeles Co.	8- 3-17	5,260	sd. sh. drilling
Crimson Pet. No. 1 Compton, Los Angeles Co.	22- 3-13	mtl.	suspended
Ohio, No. 1 Moneta, Los Angeles Co.	35- 3-14	111	sd. drilling
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	5,033	cleaning out
Archer Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	5,557	suspended
Harbor Oil Co., No. 1 Wilmington, Los Angeles Co.	18- 4-13	rig	suspended
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	101	sd. drilling
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	3,650	hd. sd. drilling
Sherman, J. W., No. 1 Puente, Los Angeles Co.	33- 2- 8	850	suspended
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,130	gas well
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	1,660	suspended
Richfield Oil Co., No. 1 Puente, Los Angeles Co.	34- 1-10	....	location
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,950	suspended
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	2,470	sd. sh. drilling
Martin, J. W., No. 1 Newhall, Los Angeles Co.	22- 1-17	1,255	hd. sd. drilling
Consolidated Oil Co., No. 1 Newhall, Los Angeles Co.	8- 3-16	1,555	cemented
National Sec., No. 1 Newhall, Los Angeles Co.	1- 3-16	874	suspended
Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co.	1- 3-16	900	suspended
Pioneer Pet., No. 1 Newhall, Los Angeles Co.	14- 3-16	1,812	hd. sd. drilling
Union, No. 1 Coyote, Sansinena, Los Angeles Co.	30- 2-10	2,575	br. sh. drilling
Beard, G. F., No. 1 Brea Canyon, Los Angeles Co.	30- 2- 9	1,099	suspended
Western Gulf, No. 1 Brea Canyon, Los Angeles Co.	28- 2- 9	3,670	br. sh. drilling
Standard, No. 1 Bastanchury, Coyote, Orange Co.	21- 3-10	4,700	sd. sh. drilling
Shell, No. 1 Bastanchury, Coyote, Orange Co.	28- 3-10	6,050	abandoning
Graham & Loftus, No. 1 Coyote, Orange Co.	18- 3- 9	1,010	sd. sh. drilling
Union Oil Co., No. 1 Richfield, Orange Co.	13- 3- 9	3,560	br. sh. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	test plug
Oil Well Eng. Co., No. 1 Newport, Orange Co.	21- 6-10	2,795	suspended
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cleaning out
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	bl. sh. drilling
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,980	suspended
San Marcos Oil Co., Well No. 1, San Diego Co.	9-12- 3	rig	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	2,170	suspended
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,250	sd. sh. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,200	sd. sh. drilling
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	550	cleaning out
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,525	cleaning out
Duncan, N. L., No. 1 Mohave, San Bernardino Co.	8- 4- 6	rig	suspended
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2- 8	802	sd. sh. drilling

Does the Thief Tell That Your Profits Have Been Stolen?
B.S.&B. Perfection Vapor Pressure
TANKS
Are Your Crude's Watchdog Guarding Your Profits
EFFICIENT SERVICE DEPENDABLE
B S & B
Our Watchword
Black Sivalls & Bryson
BARTLESVILLE - OKLAHOMA

IDECO BOYKIN

DRAW WORKS



WE place the IDECO name and reputation behind the statement that we do not believe a better Draw Works can be built than the IDECO-Boykin.

The IDECO-Boykin runs smooth and runs fast.

Has three speeds. Clutches are shifted by the foot, leaving the hands free.

Braking area unusually large, positive in action, air cooled and so easily controlled that a man can easily hold with one hand 6,000 feet of pipe without effort.

Big diameter of the spool provides speed in hoisting and longer life to wire lines.

A remarkably fine oiling system with larger oil reservoirs than is usually found in a Draw Works.

The shafts of special analysis steel are ground and polished. Chrome nickel clutches and sprockets—of heavy weight.

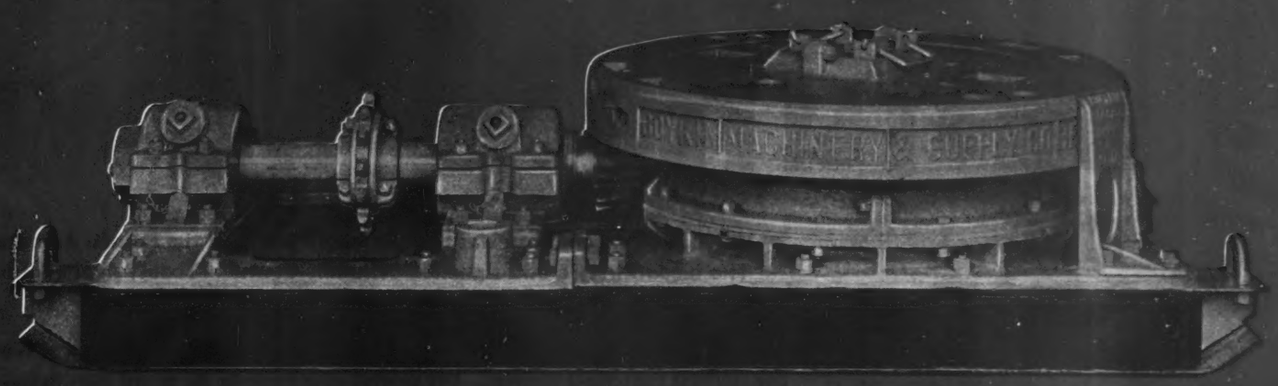
Made in two sizes. "Regular" for operations up to 4,000 feet and the "Big Texan" for deep well work.

The International Derrick

COLUMBUS, OHIO HOUSTON,

Plants: Columbus, Delaware, Ohio; Torrance, California; Beaumont, Houston, Texas. *District Offices:* New York City, N. Y.; Pittsburgh, Pennsylvania; Wichita, Kansas; Tulsa, Oklahoma; Shreveport, Louisiana; Fort Worth, Beaumont, Texas; Maracaibo, Venezuela. *Warehouses and Stocks:* Columbus, Delaware, Ohio; Seminole, Ponca, Cushing, Healdton, Okmulgee, Wewoka, Mount Carmel, Allen, Oklahoma; Shreveport, Louisiana; Fort Worth, Beaumont, Texas.

IDECO BOYKIN ROTARIES



THE IDECO-Boykin Rotary has earned its reputation over many wells in the deep well districts of the Gulf Coast.

It is the Make and Break type—and is offered in 19, 23 and 27 inch sizes.

The IDECO-Boykin is built low to make it easy for the drillers to pull the slips.

An unusual oiling system—oil bath—the entire system easily drained.

Rotary table is fully enclosed. Mud cannot get into the bearings.

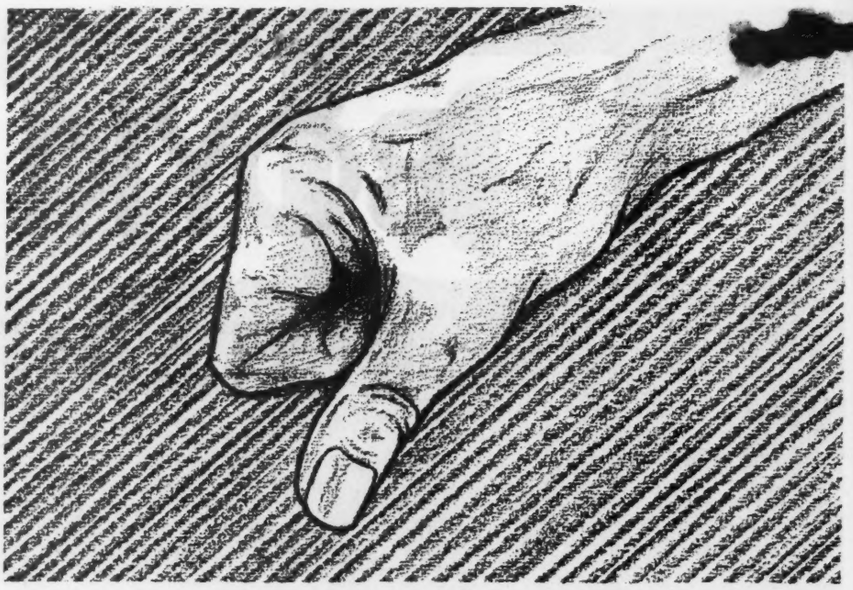
Pinion Shaft is mounted on Hyatt Roller Bearings.

The IDECO-Boykin Rotary will do everything any straight rotary will do, and in addition to the make and break, the fishing job feature is especially valuable. With it you can come out of the hole and break joints without twisting or rotating the pipe even a single turn in the hole.

Write for complete specifications.

& Equipment Company

TEXAS LOS ANGELES, CAL.



Thumbs down on RAPID ABRASION

SWIFT and sudden death was the fate of gladiators in the Roman Arena when the bloodthirsty crowd signalled "thumbs down." Today, in the oil fields, Blackor is the signal for death to rapid abrasion on drilling tools.

Blackor resists abrasion more than any other known material because it is one of the hardest materials known...the closest approach to diamond hardness...and because it protects the entire cutting surface of the tool...leaving no spots here and there exposed to abrasive attack. It makes an exceptional bond with the steel of the tool when melted on and unlike any other hard-facing or insert material...Blackor actually becomes a part of the steel. This anchors the Blackor to the steel and prevents chipping or breaking off. Blackor presents a solid cutting face that can be of any desired shape or hardness. The hardness is controlled by the number of layers, each layer being harder than the one before it.

Blackor speeds up drilling and cuts drilling costs by stopping frequent pulling of the string to change bits. It is adapted to every type of bit and needs no primary hard-facing material. It costs less to apply and requires less time. It is the proven solution to more hole at less cost. Adopt it as your standard hard-facing and watch results!

PROTECTED BY AMERICAN PATENT PROTECTION CORPORATION

Licensed Under Patent Numbers
1,613,942
1,424,536
359,925
30,021
16,347
15,311
2,580
1,069
Reissue No. 17,323
Other Patents Pending

Blackor is granular in form and extremely easy to handle and apply. Your own welder, without previous experience, can melt it on at the rate of 100 square inches per hour. Applied with the carbon electric arc at a power cost of only 10 cents an hour.

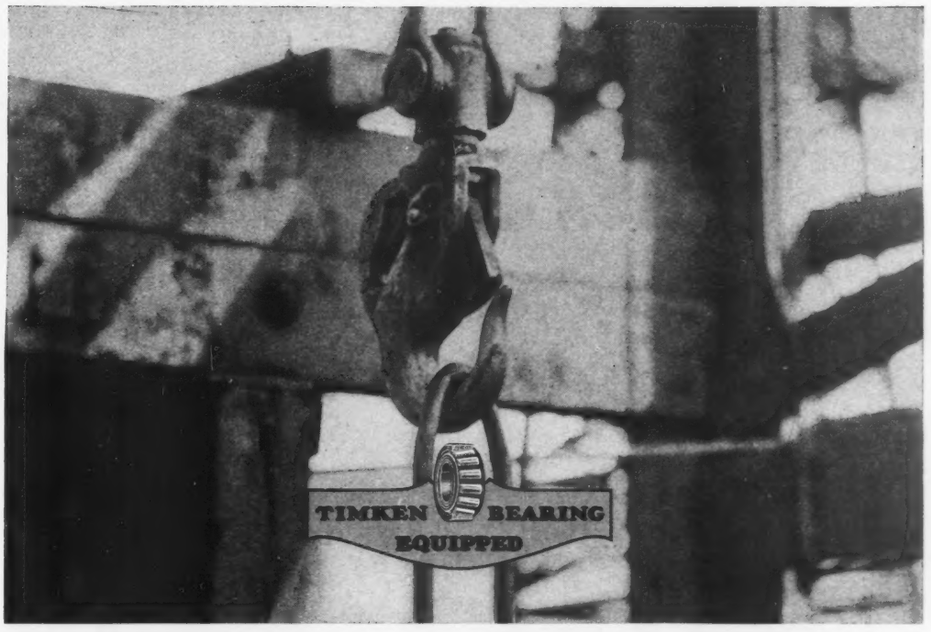
BLACKOR COMPANY

Head Office: 13,007 South Main Street
Los Angeles, California

New York Export Office: 39 Cortlandt Street
Tulsa, Oklahoma Office: 410 Thompson Bldg.
Houston, Texas Office: 616 Public National Bank Bldg.

BLACKOR

The Super Abrasion-Resistant Facing



Let The Weight Be What It May—D & B Simplex Hooks Are Timken-Equipped

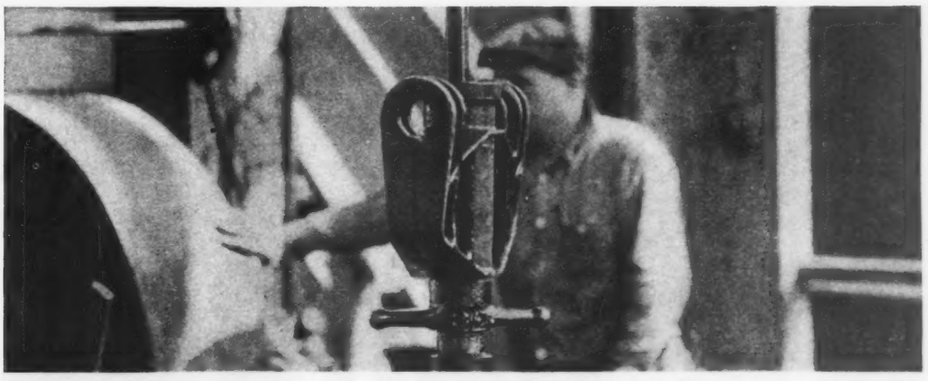
Oil well hooks should be able to safely sustain weights far in excess of those ever likely to be imposed upon them. At the same time, they must swivel freely and smoothly under any and every load.

This means that the swivel bearings must have an unusual combination of anti-friction and load-carrying capacities. With unerring judgment, the manufacturers of D & B Simplex Safety Oil Well Hooks, the D & B Pump & Supply Company, Los Angeles, (a division of Emsco Derrick & Equipment Company) have placed the responsibility where it rightly belongs—on Timken tapered roller bearings.

In common with the makers of all types of oil field equipment, they have found in the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken-made steel, a combination of abilities which no other type of bearing can duplicate—for Timkens fight friction to a finish, make lubrication negligible, carry radial, thrust and combined loads with sureness, add years to the life of the equipment in which they are used and take the menace out of maintenance.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**



March 27

Y

FORT W
tailing the

Pool, Ecto
attention a
the week,
starting to

Another
World Po
World Oil
ond well,
pumper.
feet, and
It was sh
glycerin f
15 quarts
pumping
bbls. of w
new locati
pany.

Landret
University
north and
Ector Cou
Penn Poo
mately th
The well
1-T Unive
a 15,000,0
to be lost
recovery.
struck at
flowing a
oil at 3,6
bbls. per
field gave
no increa

P

The Po
most acti
wells dril
drilling
miles. T
watched
to warra
producers
sion well
already h
mile, it
wells to
producers
direction.

The Y
was redu
000 bbls.
This was
bers of t
Railroad
facts and
The six-
major oi
crude to
in causi
Commiss
age as c
prevent

The o
order a
expiratio
tifiable h
following
leases:

Compa
Californi
Gulf Pro
Humble
Phillips
McMan
Shell Pe
Simms
Mid-Kan
nental

Yates Curtailed to 110,000 Barrels

Increasing Production of Penn Pool May Offset 20,000-Bbl. Cut in Pecos. Extend Howard-Glasscock Proration

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Mar. 24.—Curtailing the Yates Pool, Pecos County, from 130,000 bbls. per day to a new allowable of 110,000 bbls. per day, was practically the main bit of new interest in the Permian Basin in the past week, although Landreth Production Co.'s No. 2-T University, a three-quarter mile southern extension of the Penn Pool, Ector County, continued to hold attention as it was drilled deeper during the week, after topping the pay and starting to flow the previous week.

Another location was made in the World Pool, Glasscock County, by the World Oil Co. as it completed its second well, No. 2-C McDowell for a small pumper. Total depth of this well is 2,480 feet, and top of the pay is 2,435-48 feet. It was shot with 25 quarts of nitroglycerin from 2-378-80 feet and with 15 quarts from 2,435-48 feet. It is now pumping only 7½ bbls. of oil and 7½ bbls. of water per day. Three-C is the new location made this week by the company.

Landreth Production Co.'s No. 2-T University, located 330 feet from the north and east of Section 3, Block 35, Ector County is the new producer of the Penn Pool, extending that Pool approximately three-quarters of a mile south. The well was drilled 100 feet east of No. 1-T University when that well blew in as a 15,000,000-foot gasser, causing the tools to be lost in the hole and preventing their recovery. Top of the pay of 2-T was struck at 3,588 feet and the well started flowing at 3,639 feet with an increase in oil at 3,635-55 feet, making about 625 bbls. per day. The last report from the field gave it as drilling at 3,688 feet with no increase.

Penn Most Active Area

The Penn Pool continues to be the most active area in West Texas with 25 wells drilling in the field and two more drilling to the north, 1 mile and 1½ miles. These two wells will be closely watched when they gain sufficient depth to warrant oil shows, for if they prove producers they will be the main extension wells of the field. As the pool has already been defined to the southeast a mile, it is almost assured that the two wells to the north will be completed for producers, and extend the pool in that direction.

Yates Curtailment

The Yates Pool allowable production was reduced from 130,000 bbls. to 110,000 bbls. per day taking effect March 19. This was done at the request of all members of the advisory committee after the Railroad Commission considered the facts and accepted the recommendation. The six-day week adopted by some of the major oil companies and the running of crude to storage were the main factors in causing the reduction. The Railroad Commission considers running oil to storage as constituting a waste, and aims to prevent such action if possible.

The order is a temporary emergency order and can be rescinded before the expiration of the 60 days if thought justifiable by the Railroad Commission. The following is the new daily allowable by leases:

Company—	New	Old
California Co.	13,952	16,579
Gulf Prod. Co.	15,069	18,024
Humble O. & R. Co.	2,519	3,006
Phillips Pet.	1,744	1,924
McMan O. & G.	4,003	4,563
Shell Pet.	5,218	6,094
Simms	6,349	7,469
Mid-Kansas and Transcontinental	52,756	62,812
Transcontinental	415	481
Grayburg	410	410
Cosby Drilling Co.	660	660
Plymouth Oil Co.	45	45
Kirby Pet.	75	75
Kirby-Edson	230	230
Continental	620	739
Moncrief-Savoy	660	660
McMan O. & G. and Continental	5,083	6,029
Skelly	177	185
Dixie Oil Co.	15	15
Total	110,000	130,000

Fomer runs of the pipe line companies serving the pool are as follows:

Shell P. L. Co.	35,137
Illinois P. L. Co.	42,244
Humble P. L. Co.	34,704
Gulf P. L. Co.	17,915
	130,000

These will be altered to conform to the new allowable production.

Such a reduction in the Yates Pool will be of material aid in cutting West Texas daily production, but the 20,000-bbl. daily cut will soon be made up by increased production in the Penn Pool in Ector County. Its present daily average is 3,820 bbls., the wells pinched, and from now one there will, no doubt, be new wells completed in the field each week, adding to the daily average production to help bring the total daily average of West Texas up to its past levels.

Dry Hole in Loving County

Loving County became more interesting after the Independent Oil & Gas Co. completed a good well on the east side of the Wheat Field a short time ago, but a wildcat test northwest of the field drilled by the Humble Oil & Refining Co. has been one of the disappointments following the Independent's semiwildcat discovery. Humble's No. 1 Kloh, located in the C, Section 35, Block 55, T.&P. Survey, was abandoned this week at a total depth of 4,085 feet. Elevation of the test is 2,814 feet, top of the salt was found at 1,230 feet and top of the black lime was encountered at 3,948 feet.

Luna Oil Co.'s No. 1 Edwards, in Section 18, Block 33, Township 2s, T.&P. Survey, approximately 4 miles west of the Coffee-Phillips Pool, in Glasscock County, has been completed as a 50-bbl. well on the pump, showing 3 per cent water. It was drilled to a total depth of 2,491 feet, but was plugged back to 2,295 feet when water was encountered at 2,470 feet. Elevation is 2,548 feet. Top of the pay was found at 2,277 feet and it averaged 135 bbls. per day from 2,299 feet. Water has caused the well to decline to the present small production.

Top of the lime of Texas Pacific Coal & Oil Co.'s No. 1 Belcher, the wildcat drilling in Section 10, Block 4½, G.C.& S.F. Survey, Upton County, is reported to have been encountered at 3,620 feet. Surface elevation is 2,684 feet. It is now drilling ahead at 3,630 feet.

Sale of University Lands

The University Lease Board has listed several tracts of acreage in Ector and Andrews Counties for sale March 29, 1930, but reports advise that some of this acreage is now under litigation, and probably the tracts will have to be withdrawn from the sale as two companies claim prior right to the land. The land involved in litigation is named as being in Sections 4, 5 and 6, Block 13, Andrews County, and the California Co. and Amerada Petroleum Corp. hold rights to this land. It was evidently an error on the part of the board that this land was offered for sale.

Howard-Glasscock Proration Extended

At the Howard-Glasscock County proration meeting held at Dallas, Tex., March 22, it was voted to extend proration for another six months' period. This area has been rather passive for the past several weeks but four new locations were staked this week, and it appears that activities may be revived a little.

Last week an error was made in reporting the location of Llano Oil Co.'s No. 1 Hogan, Ector County, as in Section 7. This test is in the NW cor., Section 18, and the discovery well is in Section 7, Block 44, Township 2s, T.&P. Survey.

W. G. Clark's No. 2 Newman, north of the Tiner Pool, Section 52, Jones County, was deepened to 2,540 feet, a distance of 7 feet, and made 23 bbls. of fluid in 20 hours, 50 per cent oil and 50 per cent water, not showing up as a commercial producer, and offering but little encouragement in the way of an extension.

WEST TEXAS PRODUCTION
Week ending March 22

County	No. Wells	Bbls.
Andrews County	1	175
Crane County	335	36,660
Crockett County	46	1,636
Fisher County	7	800
Ector County	8	3,820
Garza County	5	45
Glasscock and Howard	495	38,670
Jones County	73	1,365
Loving County	20	1,248
Mitchell County	143	2,135
Pecos County	429	140,420
Reagan County	253	16,840
Runnels County	3	15
Scurry County	5	20
Upton County	254	9,075
Ward County	25	1,650
Winkler County	605	88,545
Total production this week	2,707	343,059
Total production last week	2,700	345,538
Difference	7	2,479

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended March 24

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co. et al's No. 1 Mathis, 990 ft. from S and W, Sec. 4, Blk. A-46, Public School Land	Set 12½-in. casing 820 ft.; drlg.
Deep Rock Oil Co.'s No. 1 Miles, 990 ft. S, 1,650 ft. E. of NW cor., Sec. 22, Blk. A-46, School Land	Underreaming 12½-in. casing; total depth 910 ft.
Deep Rock Oil Co.'s No. 1 Ogden, 2,310 ft. E, 330 ft. S. Sec. 6, Blk. A-46, Public School Land	Top pay 4,345 ft.; top lime 4,050 ft.; averaging 200 bbls. day; total depth 4,428 ft.; est. 200 ft. water in hole 4,414-28 ft.
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land	Drlg. 250 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, School Blk. A-46	Carrying 12½-in. casing; drlg. 1,140 ft.
R. R. Penn's No. 1 Wilson, C, Sec. 20, Blk. A-37, School Blk.	Location.
BORDEN COUNTY	
Moncrief et al's No. 1 Munger, 1,980 ft. from N and E, Sec. 15, Blk. 31, Twp. 4n, T.&P.R.R. Sur.	Drlg. 3,405 ft.
Phillips et al's No. 1 Goode, 330 ft. N and E of SW cor. SE of Sec. 16, Blk. 33, Twp. 4n, T.&P.R.R. Sur.	Drlg. 965 ft.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Top salt 1,080 ft.; shut down 2,540 ft.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,250 ft.; hole full water 1,135-85 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.&S.F. R.R. Sur.	Show oil 1,830 ft.; drlg. 2,075 ft.
Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.
COKE COUNTY	
Arkansas Fuel Oil Co.'s No. 1 Stepp, 1,020 ft. NE, 2,310 ft. W of SE cor., Sec. 35, Blk. 1-A, H.&T.C. Sur.	Rig.
Cates & Fitzhugh's No. 1 Mimms, 660 ft. N and W of SE cor., Sec. 39, Blk. W, T.&P.R.R. Sur.	Rig.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 2,892 ft.
CONCHO COUNTY	
Duffy et al's No. 1 Callan, 1,520 ft. N and 1,120 ft. W of SE cor., Sec. 21, Blk. 10, H.&T.C.R.R. Sur.	Spudded and shut down.
Duffey et al's No. 2 Noyes, NW, Sec. 19, Blk. 70, H.& T.C.R.R. Sur.	Location.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor., G. Emmig Sur. 130, 6 mi. W of Paint Rock	Shut down 735 ft.
Watchorn Oil & Gas Co. et al's No. 1 Noyes, 1,320 ft. from N and W of Sec. 19, Blk. 70, H.&T.C. Sur.	Location.
CRANE COUNTY	
Cranfill et al's No. 1 Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Rigging up.

(Continued on Page 114)

WEST TEXAS COMPLETIONS
Week Ending March 22

Crane County

Church & Fields' No. 6 Dewell-University was shot with 300 quarts at 2,870-3,023 feet and had an initial production of 350 bbls.

Coke County

Mid-Kansas Oil & Gas Co.'s No. 1 Lackey, located in Section 272, Block 1-A, H.&T.C.R.R. Survey, was drilled to a total depth of 4,255 feet, was plugged back to 3,763 feet, had an oil show at 3,755 feet, and swabbed 15 bbls. oil first day, 5 bbls. oil second day, nothing the third day and was dry and abandoned.

Ector County

Llano Oil Co.'s No. 1 Midland National Bank, located in Section 18, Block 44, Township 3s, T.&P.R.R. Survey, was drilled to a total depth of 3,843 feet, encountered sulphur water at 3,838-43 feet, filled up 2,800 feet in 48 hours and was dry and abandoned.

Glasscock County

World Oil Co.'s No. 2-C McDowell, located in Section 21, Block 34, Township 2s, was drilled to a total depth of 2,480 feet, topped the pay at 2,435-48 feet, was shot with 25 quarts at 2,370-80 feet, and shot again with 15 quarts at 2,435-48 feet and pumped 7½ bbls. oil and 7½ bbls. water.

Howard County

Amerada Petroleum Corp.'s No. 14 Dora Roberts was drilled to a total depth of 2,535 feet, was shot with 5 quarts at 1,800-16 feet and was shot again with

(Continued on Page 75)

Gray County Proration Being Argued

Production Continues to Climb, Daily Average Reaching 59,690 Bbls. Wildcats in Various Counties Interest Operators

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Mar. 24.—The most interesting event of the week in the Panhandle district was the proration meeting held at Pampa, March 21. Much evidence was given for and against proration in Gray, Hutchinson, and Carson Counties, and the Railroad Commission is expected to rule in a short time on whether evidence taken at the hearing was sufficient to warrant the State taking over the proration of production in the flush pools of these three counties.

Commissioner C. V. Terrell and R. D. Parker, chief supervisor of the state oil and gas division, conducted the hearing. Jack Davis, scout for the Humble Oil & Refining Co., and E. V. Foran, petroleum engineer of Wichita Falls, Tex., were the chief witnesses on the side of the state supervision, while several others took the opposing side. Independent operators, and the Gulf Production Co. and Magnolia Petroleum Co. were against state supervision, offering testimony that no waste exists in the pools. Both sides admit there is no waste above ground at the present, but those seeking state supervision testified there was underground waste which the state should prevent.

At a meeting of a few operators at Pampa on March 14, a committee was appointed to draw up a proposed plan of enforced proration which was submitted at the meeting on March 21. It was argued that such proration in the Panhandle fields would be as disastrous to the independent producer as another cut in the price of crude, consequently the independents fought state supervision, and were joined by the two major companies mentioned in their fight.

Gray County Gains

Production in Gray County continues to climb, and this week the daily average went to 59,690 bbls., almost 2,000 bbls. more than the previous week. Two wells were deepened in the county, increasing the flow of both to a great extent. These wells are the Magnolia Petroleum Co.'s No. 2 J. E. Wright and Wilcox-Pampa Oil Co.'s No. 10 Combs & Worley. The former was completed on November 23, 1929 at a total depth of 2,787 feet for an initial production of 410 bbls. On March 19 it was deepened to 2,824 feet and a second pay was found at 2,814 feet increasing the flow to 878 bbls. The second well was completed at a total depth of 2,820 feet after topping the pay at 2,811 feet, for an initial production of 790 bbls. per day with 32,000,000 feet of gas. It was later deepened to 2,855 feet and flowed 3,630 bbls. the first 24 hours.

The semiwildcat well of the Operators Royalty Co. on the H. J. Eddington farm in Gray County, in the NE cor. NW, Section 34, Block B-2, H.&G.N. Survey, shut down at 3,001 feet with 500 feet of oil in the hole. It was later bailed dry. Top of the granite wash pay was logged from 2,937-45 feet. There is not enough gas to flow the well, and it is not looking extremely good at the present time. This test is 2½ miles southwest of LeFors, and has a chance of opening more acreage to production in this area.

Disappointment in Tarver

Another disappointment was marked up in the Tarver Pool of Foard County this week when Shell Petroleum Corp.'s No. 1 Ward in Section 3, G.C.&S.F. Survey, on the north edge of the field was abandoned at a total depth of 2,175 feet after encountering a showing of oil at 2,053 feet and an oil sand at 2,058 feet.

Sun Oil Co.'s No. 1 Milburn, on the Milburn 80-acre tract in the Joseph De Guire Survey, Cooke County, midway between the Bulcher and Huggins Fields, encountered an oil sand at 1,211-19 feet and is shut down after cementing casing. This looks to be a possible connection of the two pools, and if it really becomes a producer will pave the way for considerably more activity in this area, and open up several sections to production.

E. J. Stump's No. 1 Brewster, the new semiwildcat discovery in Section 48, Blind Asylum lands, southeastern Shackelford County, which was completed last week for an initial of 225 bbls at a total depth of 2,106 feet, fell off in production this week to 160 bbls. daily. As a result of this great reduction the owner deepened it to 2,109½ feet and the production increased to 325 bbls. per day.

The Arcadia Refining Co. is reported to have purchased from A. C. McDonald 60 acres in the T.E.&L. Survey, No. 2,269, and 280 acres in the T.E.&L. Survey, No. 2,995, this acreage having 61 producing wells with a daily average of 60 bbls.

The George Pool, Brown County, produced a total of 598 bbls. from 48 wells on March 19, a decrease of 100 bbls. from the previous week. Water is showing up in all leases in the pool, and repressuring through one key well on the E. L. Smith lease has not been successful. This key well will be put back on the pump if possible.

The Overall Pool in Coleman County produced a total of 1,255 bbls. from 22 wells on March 19.

The Lloyd Pool in Coleman County, the latest most interesting pool and area of the county, produced as follows on March 21: Lloyd's 6 producers, 156 bbls.; Agnew, 67 bbls. of oil and 20 bbls. of water on pump; Kidney-Kamon, 20 bbls. on pump; Taylor-Link, 2 wells, 82 bbls., and Joines' 8 wells, and Tidal Oil Co.'s 3 wells, 101 bbls., a total of 426 bbls. from 21 wells.

PANHANDLE COMPLETIONS

Week ending March 22
Hutchinson County

Mid-West Exploration Co.'s No. 1-B Pitcher, located 330 feet east and south of W half of SW Section 19, T. C. R. R. Survey, had an initial production of 125 bbls. at 3,082-3,132 feet.

Gray County

Southern Petroleum Exploration Co.'s No. 1 J. G. Noel, located 330 feet south and west of W half NW Section 138, Block 3, I. & G. N. R. R. Survey, was drilled to a total depth of 3,198 feet, topped the pay at 3,178 feet and had an initial production of 240 bbls. Magnolia Petroleum Co.'s No. 2 J. E. Wright was completed in November at a total depth of 2,787 feet with an initial production of 410 bbls. and was deepened March 19, 1930, to a total depth of 2,824 feet, encountering the second pay at 2,814-24 feet and had an initial production of 878 bbls. the first 24 hours. Wilcox-Pampa Oil Co.'s No. 10 Combs-Worley was completed March 8, 1930, with an initial production of 790 bbls. and 32,000,000 feet of gas at 2,811-20 feet and was deepened March 12, 1930 to 2,855 feet and flowed 3,630 bbls. first 24 hours.

Wheeler County

Lone Star Gas Co.'s No. 3 Linkey, located 330 feet south and west of NE cor. Section 106, Block 23, H. & G. N. R. R. Survey, had an initial production of 34,000,000 feet of gas at 1,723-1,900 feet. Lone Star Gas Co.'s No. 1 Hashor had an initial production of 8,000,000 feet of gas at 1,705-80 feet.

NORTH TEXAS PRODUCTION

Week ending March 22

Panhandle District—	Prod.
Carson County	9,330
Hutchinson County	23,440
Gray County	59,690
Moore County	580
Potter County	60
Wheeler County	545
Total production this week	93,645
Total production last week	91,508
Increase	2,137
Wichita District—	
Archer County	17,775
Baylor County	600
Clay County	810
Cooke County	4,500
Foard County	235
Jack County	4,310
Haskell County	65
Montague County	6,390
Throckmorton County	870
Wilbarger County	24,725
Young County	9,675
Wichita County	25,640
Total production this week	95,595
Total production last week	94,850
Increase	745
Ranger District—	
Brown County	7,935
Callahan County	3,700
Coleman County	5,010
Comanche County	445
Palo Pinto County	720
Eastland County	5,235
Shackelford County	6,500
Stephens County	7,695
Total production this week	37,240
Total production last week	37,303
Decrease	63
Grand total production this week	226,480
Grand total production last week	223,661
Increase	2,819

WICHITA FALLS DISTRICT COMPLETIONS

Week Ending March 22
Archer County

Barnsdall Oil Co.'s No. 12 Wilson had an initial production of 50 bbls. at 1,704-08 feet. J. A. Minton's No. 1 Kuhr was dry and abandoned at 1,502 feet. Brashear P. Co.'s No. 1 Richardson was dry and abandoned at 1,260 feet. Consolidated Oil Co.'s No. 2 Harmel had an initial production of 13 bbls. at 1,435-40 feet. Coombs & Rogers' No. 1 Kunkel was dry and abandoned at 1,226 feet. F. P. Cullum's No. 2 Falls County fee was shot with 100 quarts at 1,119-39 feet and had an initial production of 115 bbls. Cullum & Alexander's No.

(Continued on Page 110)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending March 24
CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Champlin Ref. Co.'s No. 5 McConnell, 990 ft. S line, 330 ft. W line, N 120 ac., NW, Sec. 67, Blk. 4, I. &G.N. Sur.	Drlg. 1,965 ft.
Danciger O. & R. Co.'s No. 1 Block, 330 ft. N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur.	S.D. 2,985 ft.
Delmar Oil Co.'s No. 5 Noel, 330 ft. S and W, NE cor. W½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	S.G. 3,000-10 ft.; S.D. 3,131 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Eller, 330 ft. S and W, NE cor. NW, Sec. 200, Blk. 3, I.&G.N. Sur.	Drlg. 2,240 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Simms, 330 ft. S and E, E 140 ac., N 160 ac., S 320 ac., Sec. 11, Blk. 7, I.&G.N. Sur.	Rigging up and S.D.
Empire G. & F. Co.'s No. 1 Bennett, C SE, Sec. 6, Blk. B-5, B.&B.R.R. Sur.	Spudded.
Empire G. & F. Co.'s No. 1 Thorp, C NW, Sec. 26, Blk. T, A.B.&M. Sur.	Drlg. 3,700 ft.
Empire G. & F. Co.'s No. 2 Deahl, C NW, Sec. 25, Blk. Y-2, G.B.&C.N.G.R.R. Sur.	Drlg. 640 ft.
Gulf Prod. Co.'s No. 1 Burnett-C, C SE SE, Sec. 35, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 2,750 ft.; hard granite; 42,000,000 ft. gas.
H.AM. Oil Co.'s No. 1 Cooper, 330 ft. S and W, E½ NE, Sec. 5, Blk. 9, H.&G.N.R.R. Sur.	T.D. 3,105 ft; 2,000 ft. oil in hole.
McClintock et als' No. 2 Garner, 330 ft. W and S of E 55 ac. of N 80 ac., NW, Sec. 105, Blk. 4, I.&G. N.R.R. Sur.	Rigging up and S.D.
Osborne et als' No. 3 Percival, 330 ft. N and W, SE cor. E½ NE, Sec. 199, Blk. 3, I.&G.N.R.R. Sur.	Drlg. 2,365 ft.
Pansota Oil Co.'s No. 1 Block, 330 ft. S and W, NE cor. SW, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	S.D. 3,060 ft.
Phillips Pet. Co.'s No. 1-A Garner, 430 ft. S line, 330 ft. W, Sec. 114, Blk. 4, I.&G.N. Sur.	Drlg. 1,880 ft.
Phillips Pet. Co.'s No. 1 Pickens, 990 ft. E line, 330 ft. N line, NE cor., Sec. 31, Blk. 7, I.&G.N.R.R. Sur.	Rig.
Prairie O. & G. Co.'s No. 2 Nail, 330 ft. N and W lines, N½ E½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	10,000,000 ft. gas 2,830-2,985 ft.; S.D. 3,123 ft.
Ryan Cons. Oil Co.'s No. 7 Block, 330 ft. N, 990 ft. W, SE cor. NE, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	S.D. 3,062 ft.
Shamrock O. & G. Co.'s No. 1 Thompson, 330 ft. S and W lines, E 80 ac., NE, Sec. 5, Blk. 7, I.&G.N. Sur.	Rig.
Shell Pet. Corp.'s No. 1 Percival, 330 ft. N and E, SE, Sec. 199, Blk. 3, I.&G.N. Sur.	S.D. 600 ft.
Skelly Oil Co.'s No. 19 Schafer, 330 ft. N, 990 ft. E, SW cor. NE, Sec. 198, Blk. 3, I.&G.N. Sur.	6,000,000 ft. gas 2,895-2,970 ft.; S.D. 3,100 ft. by agreement.
Skelly Oil Co.'s No. 20 Schafer, 330 ft. N, 990 ft. W, SE cor. N½, Sec. 198, Blk. 3, I.&G.N. Sur.	S.D. 3,090 ft.
L. W. Timm's No. 2 Garnet (White Deer), 330 ft. S and W, NE cor., Sec. 104, Blk. 4, I.&G.N.R.R. Sur.	S.D. 1,008 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 Slemmons, SW cor., Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur.	S.D. 510 ft. for csg.

CHILDRESS COUNTY

Continental Oil Co. and Sun Oil Co.'s No. 1 Johnson, 660 ft. NE, Sec. 580, Blk. H, W.&N.W. Sur.	Drlg. 1,415 ft.
C. L. Sloane et als' No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.; C.O.

COCHRAN COUNTY

Westbrook et als' No. 1 Slaughter, 400 ft. S and E, Labour 67, League 118, Knox Co. School lands	T.D. 5,036 ft.

COLLINGSWORTH COUNTY

Shoupe Bros.' No. 1 Aldus, 410 ft. N, 330 ft. E, Sec. 96, Blk. 16, H.&G.N.R.R. Sur.	Drlg. 1,190 ft.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N line, 985 ft. E line, Sec. 22, Blk. E, D.&P.R.R. Sur.	T.D. 3,006 ft.; contract depth.
Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur.	D. 4,000 ft.

(Continued on Page 76)

Illustrated above is one step in the making of a Halliburton Cement Mixer in the company's shops.

In oil well cementing s-p-e-e-d is the indispensable factor, the essential "ingredient." When Halliburton entered the field no mixing method was fast enough to provide the SAFETY factor desired. Accordingly, an entirely new principle of cement mixing was devised—a type of mixer which provides not only the fastest known method of mixing cement and water but one which introduces a new degree of mixing *efficiency*. The Halliburton mixer is used only in the Halliburton Process.

To keep abreast of drilling methods, it is necessary to keep abreast of cementing developments. THE CEMENTER—filled with interesting information—will be sent gratis as issued on receipt of the coupon.

Halliburton Oil Well Cementing Co.
Dept. OG, Duncan, Oklahoma.

Without cost or obligation, please place my name on the list to receive THE CEMENTER regularly as issued.

Name _____

Company _____

Address _____

HALLIBURTON

OIL WELL CEMENTING CO.

Duncan, Oklahoma

Pipe Line Construction News

SOUTHERN NATURAL GAS TO LAY 60 MILE LINE

Contract for the construction of a natural gas line from a point near Louisville, Miss., to Meridian, has been awarded to W. S. Bibb of Birmingham by the Southern Natural Gas Corp. The contract involves the expenditure of $400,000. Construction of the line will begin at once and will be completed on or about June 1. The line will be approximately 60 miles in length and of sufficient size to supply the city of Meridian with an abundant volume of natural gas. While no announcement has been made, it is possible that communities between Louisville and Meridian will have natural gas available. The distribution of natural gas in Meridian will be through the mains of the Mississippi Service Co., operators of the local company. The steel pipe for this construction has been ordered from the United States Steel Corp. The appropriation necessary for the construction of the line into Meridian is one item on the 1930 construction program for the territory traversed by the Southern Natural Gas Corp. system, which will involve several million dollars. This is the first large lateral line which has been authorized by the natural gas company since the completion of the main transmission system, which is now engaged in supplying natural gas through local distributing companies in many cities of the South between Monroe, Birmingham and east to Atlanta. It is expected that several additional lateral lines into important towns and cities of the Southeast will be authorized during this year. It is understood that requests are being received by the Southern Natural Gas Corp. from citizens of many cities, which heretofore have not been included in the proposed group to be supplied with natural gas service. In each case officials of the company are giving careful consideration to these requests, which may result in the natural gas company authorizing the construction of lateral lines to supply a larger number of communities and cities with natural gas than was at first contemplated by the transmission line officials.

W. S. Bibb, the successful bidder for the Meridian line, is gathering his forces and materials now for the purpose of beginning work.

LONE STAR GAS CO. CONSTRUCTION PROGRAM

FORT WORTH, Tex., Mar. 22.—Two of the chief units of the Lone Star Gas Co. program this year are the construction of a new main line compressor station in a new gas field near Brad, Tex., near Mineral Wells. Several miles of line, at least 12-inch pipe, will be laid into this field. These lines will be enlarged as the field develops.

This will be a considerable construction job because the company finds it necessary to build a large dam for the storage of water to be used in its engines and for cooling purposes. The dam will be built on a branch of the Iona Creek and the lake will hold more than 20,000,000 gallons of water.

Five or six cottages for company employes will be built near the compressor station and others will be added as the force grows. The new station will assist pressures all over the system as it will add considerable horsepower to the 25 other compressor stations now in use by the company.

The field in Milan County, 6 miles east of Rosebud, is now being connected to the lines of the company. Three wells have been drilled here and five more will be drilled shortly. The line bringing this gas from the field will tie into the Temple line near Eddy. There will be other construction on the system south of Dallas in order to increase pressure and gas supply next winter.

On the north end of the system one of the major projects will be the replacing of two 12-inch lines from Petrolia, Tex., to the field at Duncan, Okla. These lines, involving about 62 miles, will be replaced with larger pipe and this will occupy a large construction crew.

There will be developments near Sipe Springs in Comanche County, midway between Eastland and Brownwood. The company recently built a line in this locality but its drilling operations have been held up by lack of water.

The Dallas Gas Co. will have considerable activity. The company's payroll last year was in excess of a half million dollars and this year's construction program will increase this figure more than $200,000. The usual maintenance and repair work will be pushed with vigor by the company during the spring and summer.

UNION OIL CO. LINE FROM KETTLEMAN HILLS

LOS ANGELES, Calif., Mar. 22.—Fourteen cars of 6-inch pipe were unloaded in Coalinga for the Union Oil Co.'s new pipe line from Kettleman Hills to Port Avila near San Luis Obispo. Ten more cars are to be received in Coalinga later. Additional pipe will be unloaded at Paso Robles and Santa Marguerita.

The pipe line will connect at the Tar Canyon station with the line and storage that comes from the Western States refinery in the Kettleman Hills, which is taking the wet gas product from the Continental-Marland well in Section 12-22-17 and will be used for delivering the high gravity gasoline from Kettleman Hills to the coast.

The Union Oil Co.'s line will be the third to serve the Kettleman Hills area. Shortly after the Milham Exploration Co.'s No. 1 Elliott, the discovery well, came in at a depth of 7,236 feet in the southeast corner of Section 2-22-17, in October, 1928, the General Petroleum Corp. extended its Los Angeles, Kern County line to the Kettleman Field and the Standard Oil Co. a few weeks ago finished building a line from its tank farm adjoining Kettleman City to Morro Bay.

In connection with the construction of the Union Oil Co.'s new pipe line and 82,000-bbl. tank at Tar Canyon, considerable change will be made in tankage at Avila.

SOUTHERN CALIFORNIA TO GET KETTLEMAN GAS

LOS ANGELES, Calif., Mar. 22.—The State railroad commission has authorized the Southern California Gas Co. to construct a 69-mile natural gas transmission line from the Kettleman Hills Field in Kings County to a point in the Buena Vista Field in Kern County. Completion of the line, which will make possible the introduction of Kettleman Hills gas into southern California, will give the company an interconnecting system distributing natural gas from the Midway, Ventura, Buttonwillow, Buena Vista and Kettleman Hills Fields.

Southern California Gas Co. also was authorized to construct a branch distributing line from Rio Bravo to Wasco, Shafter, McFarland and Delano, in Kern County.

WYOMING LINE

The Illinois Pipe Line Co. is preparing to lay about 4 miles of 3-inch and 4-inch pipe in the Osage Field, Weston County, Wyoming.

PIPE PRICES HOLDING; CONDITIONS UNCHANGED

By B. E. V. Luty

PITTSBURGH, Mar. 24.—Conditions in tubular goods are unchanged, volume of demand and production remaining very light. Steel trade activity as a whole continues to sag at a slow rate and prices, which have been open to question for several weeks, are now known to be subject to more shading than recently in several lines, not including pipe, while there is no admitted change in openly quoted prices supposed to represent the market in general. As to pipe, mills are holding prices with perfect rigidity. As is frequently the case, there is some shading in standard pipe by jobbers, but mills do not allow this to disturb them in their position.

The peak rate of steel production came at about the middle of February, when ingot production was at about 85 per cent of present capacity, while now it is below 80 per cent, say a couple points below. The peak of buying, of course, must have come somewhat before the middle of February, while as there is no upward trend in buying now the clear prospect is that production will decrease somewhat in the next couple weeks.

It was contrary to all seasonal precedent for peak production of steel to come so early, March being the usual month for highest production, sometimes April or May. Obviously it is difficult to attempt a forecast when it is impossible to make up a satisfactory explanation of what has already occurred. One theory is that production was forced up early in the year by buyers replenishing stocks. It is true there was drastic liquidation of inventory late in the old year, but buyers must have remained conservative and it is hard to believe that stock replenishment could account for the 46 per cent increase in the rate of steel production, comparing the whole month of February with the whole month of December.

It is reasonable enough, however, to expect that with the actual opening of spring there will be some improvement in steel demand over the present rate, the real question being whether there is any possibility of the rate of production of mid-February being regained or closely approached.

When the trend of demand has been downward instead of upward as it should be in view of the time of year, the theory will not down that perhaps there was a holdover from last year, a sort of survival of momentum, which helped steel early in the year, this influence now waning.

The situation as to steel demand is quite complicated. By no means is it a case of demand being poor all along the line, for there are wide divergences. Demand from the automobile trade is decidedly disappointing. There was only quite moderate automobile production in February, and that was confined largely to the two leading makes of small car, which provide much less steel tonnage than would the same number in larger cars. Now there is doubt whether March is doing materially better than February whereas there should be a large seasonal increase at least.

The Sun Oil Co. has definitely decided to build a common carrier 6-inch gasoline line from Marcus Hook, N. J., through Pittsburgh to Cleveland. Structural fabricating shops have been taking heavy tonnages of plain shapes from mills but lately have had relatively light fresh bookings. Freight car shops are running at quite fair rates but no further buying is in sight. The agricultural implement industry is running very well and is aided by a heavy demand for tractors.

OKLAHOMA NATURAL GAS TO LAY LINE TO QUINTON

Immediate construction by the Oklahoma Natural Gas Corporation of a 16-inch natural gas line to connect the gas reserves of the Quinton Field and Southeastern Oklahoma with the company's present main line system is announced by Thomas R. Weymouth, president of the company. The line, which, according to Oklahoma Natural officials, will cost in excess of $1,000,000, will connect with present Oklahoma Natural lines at Muskogee, Okla., and other points.

At the same time Mr. Weymouth announced the closing of a gas purchase contract with the Colton and Lester interests of Okmulgee, owners of between 80,000 and 100,000 acres of gas leases in the Quinton area and other prospective gas territories in central and southeastern Oklahoma. Several wells of considerable volume already have been drilled on the Colton and Lester properties.

"The tapping of the Quinton area by the Oklahoma Natural," said Mr. Weymouth, "is in line with the company's policy of augmenting its reserves wherever possible to take care not only of the constantly increasing demand but also to counteract the decreasing output of the older gas areas. It is the first step in the annual summer construction campaign that is a necessary part of the operations of a natural gas company that is constantly anticipating future demands. More than $2,000,000 will be expended by the Oklahoma Natural this summer on field construction work in Oklahoma.

"The move into the Quinton Field at this time also is inspired by a sense of state patriotism. There has been constant talk of various lines planning to enter the Quinton area to pipe gas into other states. The Oklahoma Natural does not engage in the interstate piping of gas, preferring rather to conserve Oklahoma gas for the benefit of Oklahoma homes and industries.

"Preliminary surveys already have been made, and work on the line will be started just as soon as final surveys can be completed and the pipe obtained from the mills."

CALIFORNIA GAS LINE

LOS ANGELES, Calif., Mar. 22.—Extension of the Kettleman Hills natural gas lines to the foothill counties was seen in surveys completed for a line from Sacramento to Roseville, Auburn and Colfax, and projected to Grass Valley and Nevada City. The latter two communities have been supplied with fuel gas, manufactured from crude oil, for more than 25 years, being served by one of the original units of the Pacific Gas & Electric Co. system.

TEXAS PIPE LINE BILL

AUSTIN, Tex., Mar. 22.—With the notation that it "may not work any good," but that he had not been shown "where it will work and harm," Governor Moody filed without signature, the bill to enlarge powers of the railroad commission in regulating pipe lines and crude oil storage facilities.

The bill will become effective 90 days after June 16. It will make public utilities of pipe lines and storage tanks and subject them to rules governing common carriers and common purchasers.

"I cannot foretell the results of this bill," he said in a notation he made on it, adding "it was intended to prevent a monopoly and to improve present distressing conditions. Some independent oil operators have opposed it, but the overwhelming majority of oil men not connected with any major company are strong in their support of this measure."

76 years experience

"Between the world and the elements" assures the value of Barrett

"ANTI-CORROSION SPECIFICATIONS"

Picture shows section of 22-inch main line of Southern Natural Gas Corporation System. Ford, Bacon and Davis, Inc., Engineers, Williams Bros., Inc., Contractors.

TO realize the kind of pipe protection you may expect from Barrett Anti-Corrosion Specifications, consider this:

There are available thoroughly authenticated records of Barrett waterproofing materials in use 40, 50 and even 60 years which are giving complete waterproofing service today.

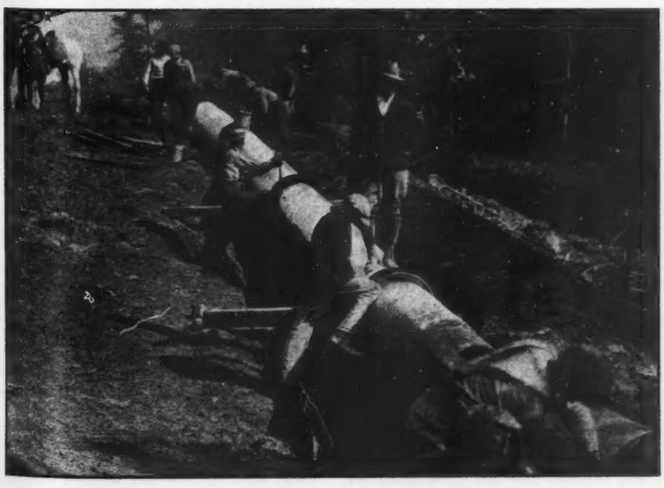
Like other Barrett products famous for long life, such as Barrett Specification Roofs, Tarvia Roads, Barrett Underground Waterproofings, for tunnels, dams, subways, etc., Barrett Anti-Corrosion Specifications represent years of expert research, study, and *proof* of quality in *actual service.*

To be exact, *more than 76 years' experience* in protecting all kinds of material from nature's destructive elements stand back of Barrett Anti-Corrosion Specifications.

The waterproofing agents used with Barrett Anti-Corrosion Specifications are made from the finest quality straight-run coal-tar pitch. Coatings are applied under the most exacting specifications, providing pipe line protection which assures uninterrupted service for years.

In addition to this quality of materials, The Barrett Company's Field Service and inspection are supplied. Barrett engineers, and other experts, are at your service throughout the course of the work.

For information on pipe protection you are invited to phone, wire or write. Bulletins on Barrett Anti-Corrosion Specifications are now available and can be had for the asking.



Another section of 22" main line, Southern Natural Gas Corp. System. Ford, Bacon and Davis Inc., Engineers, Williams Bros. Inc., Contractors.

The Barrett Company

40 Rector St., New York

OKLAHOMA FIELDS

(Continued from Page 50)

bbls. The initial production of the wells and the approximate date each well will be opened follows:

Company and lease—	Well No.	Bbls.	Opening date
I. T. I. O.:			
Walters	*3	2,204	(†)
G. Button	6	11,118	3-24-30
A. Button	9	15,013	3-25-30
Trosper	*10	10,166	3-30-30
Farley-Fuzzell	1	25,800	4-2-30
Button	4	6,926	3-31-30
Trosper	*9	3,558	3-21-30
A. Brokaw	2	4,002	3-21-30
Trosper	*6	1,925	3-26-30
Fortson	3	19,239	4- 5-30
Drake	*1	4,961	4-17-30
L. Trosper	1	4,080	3-25-30
A. Brokaw	1	7,018	4-24-30
Hiddleston	1	6,251	4-24-30
Jones	*1	6,251	4-24-30
Trosper	5	167	4-30-30
L. Canfield	2	1,374	5- 2-30
N. Emerson	*2	3,545	5- 2-30
S. Bodine	3	801	5- 3-30
Thomas-Fuzzell	3	3,524	5- 3-30
A. Bodine	6	3,612	5- 4-30
Canfield-Button	2	2,686	5- 4-30
Barker-Drake	*1	2,089	5- 5-30
Unsell-Krager	*1	2,462	5- 9-30
Theimer	*1	4,558	5-10-30
C. Brokaw	2	563	5-10-30
Jones	*1	4,944	5-12-30
Butterfield	*1	3,264	5-17-30
Pasadena Heights	*1	5,982	5-10-30
Jones Community	*1	4,944	5-12-30
Jones	*4	1,954	5-12-30
Fortson-Farely	3	15,272	5-20-30
N. Emerson	*3	2,204	5-19-30
E. Fortson	2	3,364	5-18-30
L. Farley	1	19,833	5-12-30
A. Bodine	7	609	5-23-30
Prairie:			
Hiddleston	6	14,000	4-21-30
Hiddleston	7	5,685	4-22-30
W. Franklin:			
Lowery	*4	8,376	4-23-30
Lowery	*6	6,339	5-19-30
Lowery	*7	11,335	5-11-30
Theimer	*1	7,896	5-17-30
Cromwell:			
Trosper Park	*4	2,975	5-16-30
Trosper Park	*16	9,015	5-21-30
Sinclair:			
Vencl	*2	3,310	5-14-30
Vencl	*1	14,005	5-17-30
Kinter	*3	505	5-12-30
Kinter	*4	5,000	5-19-30
School Land-54	*2	5,235	5-21-30
Coline:			
Olds	*5	3,467	5-16-30
Warren	4	11,622	5-13-30
Clauer	*2	5,130	5-23-30
Slick:			
Hoopes	*1	1,064	5-17-30
Hoopes	*2	6,758	5-20-30
Shell:			
Petty	*2	260	5-13-30
Total	55	347,951	

*Wells producing from the Simpson sand. All others are producing from the Arbuckle lime. †None given. ‡Estimated. ²Three and one-half hours. ³Twelve hours. ⁴Five hours. ⁵Two and three-fourths hours. ⁶Nineteen and one-half hours. ⁷One hour. ⁸Twenty hours. ⁹Nineteen hours. ¹⁰Twenty-two hours.

Actual Production

The production from the Oklahoma City Pool for the week ending March 24 was as follows:

Day—	Bbls.	Wells
March 18	63,178	26
March 19	77,797	26
March 20	45,880	23
March 21	66,324	35
March 22	75,068	28
March 23	74,747	30
March 24	61,424	32

Leasing in Panhandle

The Oklahoma Panhandle is one of the active leasing areas in the State. During the week the Argus Gas Co. has put on record over 99,000 acres of leases in Texas County, scattered in different parts of the county. The Empire Oil & Refining Co. has recently secured a block of 56,000 acres of leases in Texas and Beaver Counties, and the Gypsy Oil Co. has a block of 32,000 acres in the same counties. The leasing in this area is due to the activity in the gas field in Stevens County, Kansas, which is, just over the state line, north.

Northwestern Wildcats

In the northwestern part of the State the wildcat tests were still drilling, with nothing showing on the last reports. Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW, Section 14-26-24w, Harper County, was drilling at 7,710 feet, and is the deepest drilling well in the State. Same company's No. 1 Stewart, SE cor. SW, Section 33-27-15w, Woods County, was shut down waiting for rotary tools. The test has been drilling with standard tools for the last few months. It is at a total depth of 6,790 feet. Bu-Vi-Bar Petroleum Corp. and others' No. 1 Thompson, SE cor. SW, Section 10-25-15w, Woods County, was shut down at 6,104 feet waiting for the completion of some of the other deeper wildcat tests in the area. Sinclair Oil & Gas Co. and Peerless Oil Producing Co. and others' No. 1 Cromwell, SW cor. NW NE, Section 23-28-16w, Woods County, was drilling at 5,200 feet. Prairie Oil & Gas Co.'s No. 1 Wilbur, NE cor. NW, Section 23-23-17w, Woodward County, was drilling at 6,255 feet. Empire Oil & Refining Co.'s No. 1 Bruce, NE cor. SW Section 12-25-20w, Harper County, the latest wildcat to start in that part of the State, was drilling at 1,650 feet.

Busy in Chandler Area

The development of the area near Chandler in Lincoln County was revived during the week when four new locations were made and the Magnolia Pipe Line Co. commenced work on increasing its pipe line facilities in the area. The activity follows the Magnolia Petroleum Co.'s No. 1 Mayer, NE cor., Section 17-14-4, Lincoln County, which is making 15 bbls. an hour through a 1-inch choke with 325 pounds back pressure. The locations were as follows: Magnolia Petroleum Co.'s No. 2 Waggoner, SE cor. NW NE, Section 17-14-4; same company's No. 2 Mayer, SE cor. NE NE, Section 17-14-4; Prairie Oil & Gas Co.'s No. 1 School Land, NW cor., Section 16-14-4; and Tom Slick Oil Co.'s No. 1 fee, SW cor., Section 9-14-4.

Magnolia Petroleum Co. has started work on its new pump station in the NW, Section 21-14-4, to increase the capacity of its 8-inch pipe line now serving the field.

Shipments from Oklahoma City

Pipe line and tank car shipments averaging 63,604 bbls. daily from the Oklahoma City Pool, for the week ending March 19, were as follows:

Company—	Bbls.	Dly. av.
Empire	86,327	12,332
I.T.I.O.	80,931	11,561
Magnolia	70,301	10,040
Oklahoma	89,719	12,817
Prairie	88,722	12,674
Shell	2,089	297
Sinclair	11,758	1,679
Tidal	15,465	2,201
Total	445,252	63,604

Seminole Production

Production from the important pools in the Greater Seminole area shows a sharp decline for the week ending March 19. The area has a 38,266-bbl. decline. The Seminole pools averaged 221,651 bbls. from 1,826 wells, for the same period. The daily average gauges for the different pools in the area were as follows:

Pool—	Wells	Bbls.
Little River	364	42,315
East Little River	62	15,703
Carr City	58	9,667
Maud	138	6,146
Mission	107	14,232
Bowlegs	284	22,950
Earlsboro	292	37,514
East Earlsboro	135	42,027
Seminole	267	20,532
East Seminole	32	3,124
Searight	87	8,341
Allen	258	20,130
Asher	26	2,418
Konawa	21	9,249
St. Louis	481	40,409
Sasakwa	47	10,180
Total	2,659	304,037

Shipments of Crude

The daily pipe line and tank car shipments for the seven days ending March 19 were 232,617 bbls. from the Seminole area, which is a decline of about 2,000 bbls. from the preceding week. The shipments by companies for the week were as follows:

Company—	Bbls.
Barnsdall	2,245
Champlin	4,323
Continental	2,078
Consolidated	562
Cosden	5,601
Empire	6,351
Gypsy	27,890
Magnolia	18,522
Oklahoma	37,310
Prairie	23,401
Producers & Refiners	2,747
Pure	5,607
Shaffer	4,115
Shell	14,668
Sinclair	47,444
Texas	16,644
Tidal	12,145
White Oak	1,964
Total	232,617

Carter County

Magnolia Petroleum Co. has the rig up for No. 1 E. W. Spigner, SW cor. NE NW, Section 24-1s-3w. Location has been made for No. 1 W. S. Spigner, NW cor. SE NW, Section 24-1s-3w. Ven Mex Oil Co.'s No. 1 M. Keener, NW cor. SW SE, Section 29-1s-3w, is a rig. Magnolia Petroleum Co. has built the rig for No. 1 E. Cox, SE cor. NW, Section 21-2s-2w. Kamoco Oil Co. has the rig up for No. 1 C. Caffey, NE cor. SE NW, Section 25-4s-3w. Magnolia Petroleum Co.'s No. 7 Lewis, SE cor. NE NE, Section 23-1s-3w, made 189 bbls. in broken sands 2,210-2,404 feet. No. 1 E. R. Spigner, SE cor. NW NW, Section 24-1s-3w, has been completed for 108 bbls. in sand 2,193-2,201 feet. Wirt Franklin Petroleum Corp.'s No. 1 Spigner, SW cor. NW NW, Section 24-1s-3w, made 198 bbls. in sands 2,226-2,480 feet.

Creek County

Foster Petroleum Co. made location for No. 1 West, NE cor. SW SW, Section 25-19-8. Sample & Mann's No. 1 Tucker, NW cor. SW, Section 17-19-9, is drilling at 1,000 feet. Pure Oil Co. made location for No. 1 Brightman, NE cor. NW NE, Section 30-19-10. Jackson & Wise's No. 4 Eufaula, NW cor. SW NW, Section 5-18-11, is a rig. Emerson and others' No. 2 J. Brown, CNL NW NE, Section 20-17-10, is a machine rigging up. Riverland Oil Co. and F. Billingslea's No. 1-A Swoveland, C NE, Section 33-17-12, is drilling at 250 feet. Shaffer Oil & Refining Co. and F. Billingslea's No. 3 Lewis, NE cor. SW SW, Section 10-15-8, is rigging up to deepen from 3,165 feet. C. G. Tibbins' No. 8 Coneisenney, SW cor. SE NE SW, Section 30-15-9, is cleaning out to deepen from 3,020 feet. Sheridan Oil Co.'s No. 1-A Reading, NE cor. NW NE SE, Section 25-15-11, is drilling at 500 feet. W. A. Jenkins and others moved the rig in for No. 1 Kimble-Reading, NE cor. SW, Section 23-14-10. The Prairie Oil & Gas Co.'s No. 1 Bruce, NE cor. SE NW, Section 10-17-9, has been completed for 24 bbls. in sand 1,984-2,003 feet. Texas Pacific Coal & Oil Co.'s No. 9 Harjoche, NE cor. SE NE, Section 21-17-9, made 30 bbls. in Bartlesville sand 2,470-2,534 feet. Franchot Oil Co.'s No. 33 Kiefer, CSL SW, Section 17-17-12, made a 5-bbl. well in sand 1,420-68 feet. Shaffer Oil & Refining Co. and Billingslea's No. 4 Lewis, NW cor. SW SW, Section 10-15-8, made 205 bbls. in Wilcox sand 3,770-3,814 feet.

Hughes County

Magnolia Petroleum Co.'s No. 1 Brown, SE cor. NE, Section 12-9-8, is dry and abandoned at 4,359 feet in Wilcox sand.

Kiowa County

Mesa Oil Co.'s No. 3 Ditmar, NW cor. SE, Section 18-6-16w, is pumping 7 bbls. from sandy lime 332-35 feet. Parker and others' No. 4 Fuqua, SW cor. NE, Section 18-6-16w, has been completed for 12 bbls. in sand 428-40 feet.

Marshall County

Goddard Oil Co.'s No. 1 Talifero, SE cor. SW NE, Section 14-5s-5, is drilling at 100 feet. Bilbo Oil Trust Co.'s No. 9 Talifero, SW cor. SE NE SE, Section 14-5s-5, is a machine. No. 8 Talifero, SW cor. NE SE, Section 14-5s-5, has been abandoned at 638 feet. No. 3 Null, SW cor. NE NW, Section 24-5s-5, has been completed for 50 bbls. in sands 542-80 feet. F. W. Merrick's No. 14 R. H. Null, NW cor. SE NW, Section 24-5s-5, made 100 bbls. in sands 495-610 feet.

Lincoln County

Tom Slick Oil Co. made location for No. 1 James, SW cor., Section 9-14-4, Chandler Field. Magnolia Petroleum Co. staked location for No. 2 Wagner, SE cor. NW NE, Section 17-14-4. Location was also made for No. 2 Myers, NE cor., Section 17-14-4.

Logan County

The Prairie Oil & Gas Co. and T. B. Slick made location for No. 1 Sims, NE cor. SW SE, Section 22-17-1, near Coyle.

Murray County

Cheiftain Royalty Co. has built the rig for No. 1 Hendricks, SW cor. SE NW, Section 27-2-2.

Muskogee County

Hale & Reynolds' No. 1 C. Rose, NW cor. NE NW NW, Section 16-15-18, is cleaning out to deepen from 815 feet. Bement Oil Co.'s No. 1 1-A J. Toney, NE cor. NW SW, Section 15-13-16, is drilling at 360 feet. E. B. Grubbs and others' No. 1 Robins, NW cor. SW NE, Section 26-15-16, is dry and abandoned at 2,315 feet. R. H. Kimsey's No. 1-A Crittenden, CEL SW NE, Section 5-14-19, is dry and abandoned at 587 feet. Mid-Western Oil & Gas Co.'s No. 1 Phillips, C SW NW, Section 31-12-19, has been completed for 3,000,000 feet of gas in sand 649-57 feet.

McIntosh County

Mid-Western Oil & Gas Co.'s No. 1 B. Frazier, C SE NE, Section 36-12-18, is spudding.

Okfuskee County

Suppes and others made location for No. 2 Severs, SW cor. SE, Section 35-11-9. Champlin Oil & Refining Co. has the rig up for No. 9 Washington, NE cor. NW SE, Section 15-11-11. Kessler Petroleum Co. made location for No. 1-A Calloway, SE cor. NE SW, Section 3-11-12.

Oklahoma County

T. B. Slick and others' No. 1 Classen, NW cor. SE NW, Section 2-11-3w, is a cellar. Indian Territory Illuminating Co. made location for No. 1 Mitchell, SE cor. NW SE, Section 14-11-3w, Oklahoma City Field. Location has been made for No. 2 Pasadena Heights, NE cor. SW SE, Section 14-11-3w. No. 3 May Knox, SW cor. NE SE, Section 14-11-3w, is also a location. Coline Oil Co. has the cellar dug for No. 6 Clauer, SE cor. SW SE, Section 25-11-3w. Sinclair Oil & Gas Co. made location for No. 4 School land No. 54, NE cor. NW NE, Section 36-11-3w. Location has been staked for No. 5 School land No. 54, SW cor. NE NE, Section 36-11-3w. Indian Territory Illuminating Co. made location for No. 11 Jones, SW cor. SE NW, Section 31-11-2w. Sinclair Oil & Gas Co.'s No. 5 Vencl, SW cor. NW SE, Section 31-11-2w, is a cellar. No. 6 Vencl is a cellar, SE cor. NW SE, Section 31-11-2w. Cellar for No. 7 Vencl has been dug, SW cor. NE SE, Section 31-11-2w. Indian Territory Illuminating Oil Co. made location for No. 3 Sudik, NW cor. NE SW, Section 31-11-2w. No. 4 Sudik is a cellar in the SE cor. NE SW, Section 31-11-2w. Cellar for No. 5 Sudik has been dug, SW cor. NE SW, Section 31-11-2w. The Prairie Oil & Gas Co. and T. B. Slick's No. 1 Dills, C SE NW, Section 17-13-3w, is a rig moving in.

Indian Territory Illuminating Oil Co.'s No. 1 Jones Community, SW cor., Section 1-11-3w, flowed 9,888 bbls. from sand 6,439-60 feet. Wirt Franklin Petroleum Corp.'s No. 1 Theimer, SE cor., Section 2-11-3w, has been completed for 15,792 bbls. estimated, from sand 6,403-94 feet. Indian Territory Illuminating Oil Co.'s No. 1 Butterfield, SE cor. NE NE, Section 11-11-3w, has been completed for estimated 6,528 bbls. from sand 6,452-93 feet. No. 1 Theimer, SW cor. NE, Section 12-11-3w, made 11,102 bbls. in 12 hours from sand 6,245-96 feet. Wirt Franklin Petroleum Corp.'s No. 6 Lowery, SW cor. NW NW, Section 12-11-3w, flowed 6,339 bbls. in 12 hours from sand 6,412-90 feet. Indian Territory Illuminating Oil Co.'s No. 9 Trosper, NW cor. SW SW, Section 13-11-3w, was deepened from 6,335 feet to 6,345 feet and made 4,663 bbls. Indian Territory Illuminating Oil Co. and others' No. 3 Thomas-Fuzzell, NE cor. SE SE, Section 13-11-3w, has been completed in Arbuckle lime 6,027-6,460 feet making 15,480 bbls. in 11½ hours. Indian Territory Illuminating Oil Co.'s No. 1 Pasadena Heights, NW cor. SE SE, Section 14-11-3w, flowed 5,982 bbls. in 12 hours from sand 6,379-6,406 feet. Coline Oil Co.'s No. 5 Olds, NW cor. NE NW, Section 24-11-3w, has been completed for 3,038 bbls. in sand 6,398-6,435 feet. Indian Territory Illuminating Oil Co.'s No. 2 Fortson, SW cor. SE NE, Section 24-11-3w, made 3,364 bbls. in 12 hours from Arbuckle lime 6,091-6,478 feet. No. 3 Fortson-Farley, SE cor. NE NE, Section 24-11-3w, made 15,273 bbls. in a 12-hour gauge from Arbuckle lime 6,027-6,470 feet. Coline Oil Co.'s No. 4 Warren, SW cor. NW SW, Section 18-11-2w, had Arbuckle lime 6,010-6,492 feet and produced 11,622 bbls. in 12 hours. Indian Territory Illuminating Oil Co.'s No. 3 S.

Bodine, SW cor. NW NW, Section 30-11-2w, has been completed for 1,656 bbls. in Arbuckle lime 6,175-6,438 feet. No. 4 Jones, NE cor. SE NW, Section 31-11-2w, flowed 1,954 bbls. in 12 hours from sand 6,426-48 feet. Sinclair Oil & Gas Co.'s No. 1 Vencl, NW cor. SE, Section 31-11-2w, had sand 6,450-6,548 feet and made 14,005 bbls. No. 2 Vencl, NE cor. NW SE, Section 31-11-2w, has been completed in sand 6,479-6,526 feet, making 3,860 bbls.

Okmulgee County

J. F. Egan made location for No. 1 K. Fox, NW cor. SW SW NE, Section 22-16-13. Mechlin & Borlin moved a machine in for No. 9 Colbert, SW cor. NE NE, Section 14-14-14. J. L. Selby has a machine on the ground for No. 33 Anderson, NE cor. NW, Section 35-14-14. Troutt Drilling Co. moved the rig in for No. 10 Doyle, CSL NW NW, Section 28-13-14. W. C. Newman staked location for No. 1-A Replogle, SW cor. SE, Section 19-12-12. Sheridan Oil Co.'s No. 1 Bruner, NE cor. SW NW, Section 24-15-11, has been completed for 10 bbls. in Dutcher sand 2,192-2,231 feet after plugging back from 2,814 feet in Wilcox sand. D. M. Logan's No. 1 Clarkson, CWL NE SW, Section 32-15-13, has been completed for 5,000,000 feet of gas in sand 2,092-2,108 feet. J. E. Wallace's No. 12 V. Colbert, SE cor. NW NE, Section 14-14-14, made 25 bbls. in sand 1,095-1,106 feet. C. D. Burns' No. 16 I. Anderson, NW cor. NE, Section 35-14-14, made 30 bbls. in sand 1,124-53 feet. W. B. Pine's No. 1 Burgess, NE cor. SW SW, Section 17-12-13, has been deepened to sand 2,969-73 feet and completed for 58 bbls.

Osage County

Winona Oil Co.'s No. 12 C W half E half NE, Section 20-29-9, is rigging up. W. D. Gray and others' No. 6, SW cor. SE, Section 34-24-8, is a rig moving in. Harland Oil Co.'s No. 75, SE cor. NE NE, Section 26-24-11, is a machine. Peter Adamson, Jr., is moving a machine in for No. 2, SE cor. NW SE NW, Section 5-21-9. Clint Moore Estate and others' No. 3, NE cor. NW NE, Section 16-21-9, is rigging up. Winona Oil Co.'s No. 11, SW cor. SE NE, Section 20-29-9, made 35 bbls. in sand 1,542-68 feet. Peters Petroleum Co.'s No. 7, CSL NW, Section 32-24-9, made 20 bbls. at 1,625 feet after plugging back from 2,215 feet. Union Oil & Mining Co.'s No. 3 CSL NW, Section 32-23-10, has been completed for 25 bbls. in sand 2,525-45 feet. Peter Adamson, Jr.'s No. 1, NW cor. SE SE NW, Section 5-21-9, made a 15-bbl. well in Cleveland sand, 1,600-05 feet.

Pawnee County

John Byrnes' No. 4 Edmiston, CWL NE SW SW, Section 30-21-9, is drilling at 585 feet. Geraldine Oil Co.'s No. 4 Edmiston, SE cor. SW NW SW, Section 30-21-9, is at 1,118 feet in Layton sand topped at 1,085 feet, and ready to shoot. C. C. Chamberlain's No. 3 Coats, CWL SW NW, Section 26-20-9, is spudding. J. N. Vanhuss moved a machine in for No. 1 Lashley, SW cor. SE NW SW, Section 27-20-9. Foster Petroleum Co.'s No. 9 Little, NE cor. SW NW, Section 6-20-8, has been completed for 90 bbls. in Tucker sand 2,736-51 feet. Hoss and others' No. 1 Russell, SE cor. NW, Section 29-20-9, is dry and abandoned at 2,840 feet.

Payne County

Cushing Refining & Gasoline Co.'s No. 1 McFeathers, NW cor. SE SE, Section 31-18-4, is rigging up to deepen from 3,625 feet. Home Gas Co.'s No. 3 Benson, NE cor. SW NW, Section 1-18-5, is dry and abandoned at 3,594 feet. Mulberry Oil Co.'s No. 6 Sharrum, SW cor. NW NW, Section 5-17-4, made 1,092 bbls. in sand 4,159-64 feet.

Pontotoc County

W. A. Delaney & King made location for No. 1 Norriss, SE cor. NW, Section 12-4-7. Benedum & Trees Oil Co.'s No. 2 Bullard, NW cor. SE NW, Section 31-5-5, Bebe Pool, has been completed for 70 bbls. in Viola lime 2,487-77 feet. Dixie Oil Co.'s No. 2 Haynes, NE cor. NW SW, Section 32-5-5, made 120 bbls. from Viola lime 2,429-2,604 feet. Tidal Oil Co.'s No. 1 Ralls, NE cor. SW, Section 28-5-8, is dry and abandoned at 3,525 feet.

Pottawatomie County

Strapp & King's rig is up for No. 1 Earlsboro Townsite, Block 22, Lot 22, SW cor. NW, Section 8-9-5. Barrett & Brown and others' No. 1 Earlsboro Townsite, Block 3, Lot 4, NE cor. NW SE NW, Section 8-9-5, made 975 bbls. in Wilcox sand 4,366-80 feet. Independent Oil & Gas Co. and Mid-Kansas Oil & Gas Co.'s No. 4 Weldfelt, NW cor. Section 2-7-4, St. Louis Field, has been completed for 272 bbls. in Hunton lime 3,677-3,837 feet. Magnolia Petroleum Co.'s No. 1 W. Jordan, NE cor. SW SE, Section 12-7-4, made 107 bbls. at 4,153 feet after plugging back from 4,160 feet. Sinclair Oil & Gas Co.'s No. 4 Brandenburg, NW cor. SW SW, Section 7-7-5, flowed 135 bbls. from Wilcox sand 4,024-40 feet. The Prairie Oil & Gas Co.'s No. 1 Deatherage, NW cor., Section 28-7-4, made 110 bbls. in Simpson sand 4,202-07 feet.

Seminole County

Carter Oil Co. moved the rig in for No. 6 Chowning, SE cor. SW SW, Section 19-9-6, East Earlsboro Pool. Eason Oil Co.'s No. 1 Anderson, NE cor. NW NE, Section 22-9-5, is a cellar. Mid-Continent Petroleum Corp. is erecting the rig for No. 1 P. Harjo, NE cor. SW SE, Section 20-6-6, Konawa Pool. Harris and others' No. 2 Burgess, SW cor. NW SW, Section 21-6-6, is a cellar. Mid-Continent Petroleum Corp. made location for No. 16 Smith, NW cor. SE, Section 5-7-7, East Little River Pool. Location has also been made for No. 15 Smith, NE cor. NW SE, Section 5-7-7. Gypsy Oil Co. has the cellar dug for No. 5 Taylor, SE cor. SW, Section 19-9-6. The rig is on the ground for No. 6 Taylor, SW cor. SE SW, Section 19-9-6. Sun Ray Oil Co. made location for No. 1 Mathis, SE cor. NE, Section 12-5-7. Blackwell Oil & Gas Co.'s No. 4 Fleet, NE cor. SW NW, Section 13-5-7, is drilling at 1,780 feet. The Prairie Oil & Gas Co. made location for No. 7 Smith, NE cor. NE SW, Section 5-7-7, East Little River Pool. No. 1 Fleet, SW cor. NW NW, Section 21-6-6, Konawa Pool is rigging up. No. 4 Griffin, SE cor. NE NE, Section 17-6-6, is drilling at 1,600 feet. Location has been staked for No. 1 Archer, NW cor. SW, Section 8-6-6. The Prairie Oil & Gas Co. and T. B. Slick's No. 2 Amey, NW cor. SW NW, Section 21-6-6, is rigging up. The rig is being built for No. 3 Amey, SE cor. SW NW, Section 21-6-6. No. 2 K. Harjo, SE cor. NE NW, Section 8-7-7, is drilling deeper at 3,242 feet. No. 2 Tiger, SW cor. NW NE, Section 8-7-7, is drilling deeper at 3,190 feet.

Amerada Petroleum Corp. and Dixie Oil Co.'s No. 3 Fullerton, SW cor. NE SE, Section 19-9-6, East Earlsboro Pool, has been completed for 2,695 bbls. in Wilcox sand 4,117-4,206 feet. Pure Oil Co.'s No. 11 Strothers "A," NW cor. SW, Section 26-9-6, Seminole Pool, has been deepened from 4,074 feet to 4,106 feet and pumped 475 bbls. Lippa Drilling Co.'s No. 1 Tusey, NE cor., Section 31-9-6, is dry and abandoned at 4,280 feet. Gypsy Oil Co.'s No. 3 Willie, NE cor. NW NE, Section 24-8-6, flowed 1,655 bbls. from Wilcox sand 4,113-41 feet. Amerada Petroleum Corp.'s No. 1 Billington, NW cor. SW NE, Section 24-7-6, has been completed for 22,000,000 feet of gas in Cromwell sand 3,155-82 feet after being deepened. Gypsy Oil Co.'s No. 4 Willie, SE cor. NW NE, Section 24-7-6, Little River Pool, flowed 1,705 bbls. from Wilcox sand 4,105-24 feet. Mid-Continent Petroleum Corp.'s No. 1 Harjoche, SE cor. NW SE, Section 8-6-6, Konawa Pool, is dry and abandoned at 3,488 feet. No. 2 Harjoche, NE cor. SW SE, Section 8-6-6, has been abandoned at 2,950 feet. No. 3 Harjoche, SE cor. SW SE, Section 8-6-6, is dry and abandoned at 3,095 feet. Twin State Oil Co.'s No. 1 Harjo, NE cor. SE SW, Section 8-6-6, is a dry hole at 4,023 feet. Empire Oil & Refining Co.'s No. 3 Sachemeche, SE cor. NW SW, Section 9-6-6, flowed 688 bbls. in sand 2,907-52 feet. Independent Oil & Gas Co.'s No. 1 Okfuskee, NW cor. SW NW, Section 16-6-6, has been completed for 97 bbls. and 28,000,000 feet of gas in Cromwell sand 2,863-96 feet. McCulloch Oil Co.'s No. 1 Robert, NW cor., Section 16-6-6, made 770 bbls. from Cromwell sand 2,888-2,902 feet. Sinclair Oil & Gas Co.'s No. 1 Johnson, NE cor. SE NW, Section 17-6-6, has been completed for 770 bbls. in sand 2,775-2,896 feet. The Texas Company's No. 1 Atkinson, NE cor. NW NE, Section 17-6-6, made 1,900 bbls. in Cromwell sand 2,915-38 feet. Hilton, Phillips and others' No. 1 Hyde, SE cor. NE, Section 20-6-6, flowed 1,685 bbls. from Cromwell sand 3,096-3,118 feet. Carter Oil Co.'s No. 4 Spillman, SW cor., Section 7-6-8, Sasakwa Pool, has been completed for 1,610 bbls. in Wilcox sand 4,191-98 feet. Sinclair Oil & Gas Co.'s No. 1 I. Davis "B," SE cor. NE SW, Section 7-6-8, is dry and abandoned at 4,232 feet in Wilcox sand. The Prairie Oil & Gas Co.'s No. 1 Harjo, SW cor. NW, Section 7-5-8, has been completed for 37,100,000 feet of gas in sand 2,670-72 feet.

Sequoyah County

Western Oklahoma Gas Co.'s No. 1 Barnes, NE cor. SW NE, Section 33-11-25, has been completed for 1,250,000 feet of gas in sand 3,037-3,155 feet.

Stephens County

Magnolia Petroleum Co.'s No. 10 Green, NE cor. NW NW, Section 13-1s-4w, is drilling at 100 feet. Pace and others' No. 1 Feather, SE cor. NW, Section 23-2s-8w, is rigging. Dunmar Oil Co. made location for No. 1 Wilkerson, NE cor. NW NW, Section 15-2s-6w. I. D. Flanary's No. 1 Reneau, SW cor., Section 25-6-18w, has been abandoned at 1,040 feet. Magnolia Petroleum Co.'s No. 27 Kagay, SW cor. NW SW, Section 34-1s-8w, has been completed for 66 bbls. in sand 1,708-10 feet. Ven Mex Oil Co. and Mid-Continent Oil Co.'s No. 5 Burke, NW cor. NE, Section 34-1s-8w, made 100 bbls. from sand 2,223-27 feet. Dunmar Oil Co.'s No. 2 Randle, SW cor., Section 10-2s-6w, has been completed for 53,000,000 feet of gas in sand 2,812-45 feet. George Pace and others' No. 1 Wilson, NW cor. SW NW NE, Section 20-2s-7w, made a 25-bbl. well in sand 1,324-39 feet.

Wagoner County

Hale Ford Oil Co.'s No. 5 Brown, SW cor. SE NW, Section 36-16-17, is dry and abandoned at 912 feet.

PIPE LINE TO SUPPLY KANSAS GAS TO OMAHA

(Continued from Page 37)

ties Co. With this merger it is believed that Mr. Moody and Mr. Seagraves have in mind building up a new large organization outside the merged holdings, which eventually may be taken into the recently formed organization.

ANNOUNCED AT OMAHA

By Special Correspondent

OMAHA, Nebr., Mar. 22.—Details of the pipe line which the Missouri Valley Gas Co. is building from southwest Kansas to Omaha and into western and central Iowa have just been announced here by W. G. von Gemmingen, consulting engineer of the company, who is making his headquarters in Omaha.

Contrary to reports, the contract for construction has not been let, but bids are now being received and the contract will be let before April 1, according to Mr. von Gemmingen. Smith Brothers of Dallas, Tex., have submitted the only bid so far received but additional bids are promised next week.

The pipe line will start at Hugoton, Stevens County, Kansas, and will run almost as the crow flies to Omaha where it will cross the Missouri River into Iowa. Its destination in Iowa has not yet been determined. "That will depend on the market," says Mr. von Gemmingen. "We will go where the market calls."

The maximum capacity of the pipe line is to be 185,000,000 feet daily. The pipe is 24 inches in diameter and will weigh 110 pounds to the running foot. The pipe, couplings, valves, etc., for the entire line from Hugoton to Omaha will weigh approximately 250,000 tons, according to Mr. von Gemmingen. This pipe has been purchased and delivery will start April 1. The pipe will be buried approximately 3 feet beneath the surface, and the excavation will be 5½ to 6 feet.

Compressing stations will be constructed every 45 or 50 miles. These stations will have from 5,000 to 6,000 horsepower each, and a working pressure of 400 pounds per square inch will be maintained in the pipe line at all points.

Route of Line

Starting at Hugoton, in the extreme southwestern corner of Kansas, the pipe line will make for Omaha "as the crow flies," according to Mr. von Gemmingen, turning aside from a tangent only when absolutely necessary. Branch lines will be laid to reach towns near the main line which contract for service. The company is not yet ready to announce these contracts, but Mr. von Gemmingen says the company has already signed the cement plant at Superior, Nebr., which will use approximately 5,000,000 feet of gas daily.

From Hugoton, in Stevens County, the pipe line runs northeastward through Haskell County, into Gray County, crossing the Arkansas River and the main line Santa Fe Railroad at the town of Charleston. Hodgeman County is crossed near its northwest corner and the line goes within a few miles to the east of Ness City, in Ness County. Rush County, Kansas, is touched and the town of Hays, Ellis County, is left several miles to the west.

The Saline River is crossed in Russell County and Osborne County is crossed from southwest to northeast. The line passes near Jewell, in Jewell County and the city of Bellevue, in Republic County, is left to the southeast of the pipe line.

The Nebraska-Kansas state line is crossed about the center of the north line of Republic County and the line runs into Thayer County, Nebraska. From some point south of this line a branch line will be run to the town of Superior, Neb., to care for the cement plant at that point, which has contracted for 5,000,000 feet of gas daily.

After its entry into Nebraska the pipe line continues northeastward, passing through the northwest sections of Jefferson County and the southeast part of Saline County. The northwestern part of Gage County will be crossed and the line will cross parts of Lancaster, Otoe, Cass and Sarpy Counties before reaching Douglas County and Omaha.

No details are ready for announcement as to the path of the line east of Omaha.

"We go where the market is found," says Mr. von Gemmingen. "We are going into central and western Iowa. Draw your own plans and conclusions."

WEST TEXAS FIELDS

(Continued from Page 69)

170 quarts at 2,432-2,500 feet and had an initial production of 77 bbls. Group One and Continental Oil Co.'s No. 3 Overton, located in Section 5, Block 32, Township 2s, T.&P.R.R. Survey, was drilled to a total depth of 2,284 feet, was shot with 4 quarts at 2,245-55 feet, was shot with 40 quarts at 2,265-75 feet and was shot again with 70 quarts at 2,150-65 feet, proration potential 840 bbls. with allowance of 200 bbls.

Jones County

W. S. Ware's No. 2 Neuman, located in Section 52, Block 18, T.&P.R.R. Survey, was drilled to a total depth of 2,540 feet and pumped 23 bbls. oil and 23 bbls. water at 2,531-40 feet.

Nolan County

Gibson-Johnson's No. 1 Bond, located in Section 42, Block 20, T.&P.R.R. Survey, was dry and abandoned at 3,348 feet.

Ward County

E. J. Anderson's No. 1 Townsite, located in Section 7, Block 32, H.&T.C. R.R. Survey, had an initial production of 20 bbls. at 2,155-2,200 feet. L. C. Harrison's No. 1 Will Wristen was dry and abandoned at 3,365 feet.

TO MEET IN TULSA

WASHINGTON, D. C., Mar. 24.—The committee appointed by Dr. Ray Lyman Wilbur, Secretary of the Interior, as chairman of the Federal Oil Conservation Board, to make an analysis of the status of petroleum demand for 1930 will meet in Tulsa in the near future.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 70)

GRAY COUNTY

Adams Oil Co.'s No. 4 Morse, 330 ft. S and W, NE cor., Sec. 3, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,495 ft.

Baldridge & Lilley's No. 1 Melton, 330 ft. N and W, E½, SE, Sec. 95, Blk. B-2, H.&G.N.R.R. Sur. ..... Rig.

Camel Oil Co.'s No. 2-B Harrah, 330 ft. N and E, Sec. 150, Blk. 3, I.&G.N.R.R. Sur. ..... Swedging 8¼-in. csg. 2,450 ft.

Cockrell-McIlroy Oil Co.'s No. 1 Castleberry, 330 ft. S and E, Sec. 126, Blk. 3, I.&G.N. Sur. ..... Rig.

Constantine et als' No. 1 Crews, 330 ft. S and W, NE cor. SW, Sec. 20, Blk. 30, H.&G.N.R.R. Sur. ..... Shot 130 qts. 2,630-50 ft; drlg. 2,690 ft.

Danciger Ref. and Champlin Ref. Co.'s No. 4 Cook-Faulkner, 330 ft. S, 1,146 ft. W, NE cor. E 120 ac., W 210 ac., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 2,312 ft.

Danciger Ref. and Champlin Ref. Co.'s No. 5 Cook-Faulkner, 330 ft. S, 706 ft. W, NE cor. E 120 ac., W 210 ac., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 2,330 ft.

Danciger et als' No. 11 Jackson, 830 ft. S, 1,320 ft. W, NE cor. NW, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,986 ft; 700 ft. oil in hole; T.P. 2,906 ft.

Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E, SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,505 ft.

Danciger O. & R. Co.'s No. 1 Shaw, 330 ft. S, 286 ft. E of E 39½ ac., NW, Sec. 5, Blk. 1, A.C.H.&B. Sur. ..... T.D. 2,588 ft.

Danciger O. & R. Co.'s No. 1 Williams, 330 ft. N, 330 ft. E, S½ NW ..... Estimated 15,000,000 ft. gas 2,610-70 ft.; S.D. 2,720 ft.

Dixon Creek Oil Co.'s No. 1 Harrah, 330 ft. ea. way NW cor. SE NE, Sec. 150, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,910 ft.

Dunlop's No. 4 Morse, 330 ft. N and E, SW cor. SW, Sec. 17, Blk. A-9, H.&G.N.R.R. Sur. ..... T.D. 2,431 ft.

Empire G. & F. Co.'s No. 1-B Archer, 330 ft. ea. way of SW cor. SW, Sec. 139, Blk. 3, I.&G.N. Sur. ..... Location.

Empire G. & F. Co.'s No. 1 Meer-B, 330 ft. S line, 990 ft. W line, SW, Sec. 106, Blk. 3, I.&G.N.R.R. Sur. ..... Moving in rig.

Empire G. & F. Co.'s No. 1 Shields, 330 ft. ea. way out of SE cor. NE, Sec. 151, Blk. 3, I.&G.N.R.R. Sur. ..... Building rig.

Follett Pet. Corp.'s No. 1 Hood, 330 ft. S and W of W 80 ac., SW, Sec. 32, Blk. 3, H.&G.N.R.R. Sur. ..... Cmtd. 10-in. csg. 732 ft.

Gardner Bros. and Collins' No. 2 Saunders, 955 ft. S, 330 ft. E of W 68 ac., E½, J. G. Eustice Sur. ..... Location.

Grallup et als' No. 1 Morse, 330 ft. ea. way, NE cor. SE, Sec. 3, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,105 ft.

Gulf Prod. Co.'s No. 1 Bowers, 967 ft. N and E, SW cor. SE, Sec. 63, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 2,635 ft.

Haymer O. & G. Co.'s No. 1 Morse, 330 ft. ea way out of SE cor. E½ SE, Sec. 45, Blk. A-9, H.&G.N. Sur. ..... U.R. 6⅝-in. csg. 2,750 ft.

Humble O. & R. Co.'s No. 1 Combs-Worley, 330 ft. S and W, N½ SE, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ..... S.G. 2,340-45 ft., and 2,420 ft; T. D. 2,886 ft; flowing 1,100 bbls. per day; 22,000,000 ft. gas.

Humble O. & R. Co.'s No. 2 Combs-Worley, 240 ft. W line, 230 ft. N line, N½ SE, Sec. 36, Blk. 3, I.&G. N.R.R. Sur. ..... Location.

Lenix et als' No. 1 Bradford, 330 ft. N and E, W½ SE, Sec. 118, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 390 ft.

Lyon et als' No. 1-A Morse, 330 ft. S and W, NW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... Rig.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W cor. SE, Sec. 200, Blk. B-2, H.&T.N. Sur. ..... Spudded and S.D.

Magnolia Pet. Co.'s No. 4 Harrah, 330 ft. ea. way, SW cor. NW, Sec. 150, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,950 ft.

Magnolia Pet. Co.'s No. 1 Cubine, 330 ft. N and W, NE, Sec. 36, Blk. 25, H.&G.N.R.R. Sur. ..... Drlg. 1,915 ft.

Magnolia Pet. Co.'s No. 5 Magnolia, 990 ft. N, 330 ft. E, SW cor., Sec. 14, Blk. 3, I.&G.N.R.R. Sur. ..... Rigging up.

Magnolia Pet. Co.'s No. 4 Wright, 330 ft. N and W, SE cor. S½ SW, Sec. 13, Blk. 3, I.&G.N.R.R. Sur. ..... T.D. 2,830 ft; flowing at rate of 120 bbls. per hr; T.P. 2,810 ft.

Magnolia Pet. Co.'s No. 5 Wright, 330 ft. N, 752 ft. W, SE cor. S½ SW, Sec. 13, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,410 ft.

McAuley et als' No. 4 Morse, 330 ft. N and W, SE cor. NE, Sec. 2, Blk. 26, H.&G.N.R.R. Sur. ..... Rig.

McIlroy Oil Co.'s No. 1 Arnold, 330 ft. ea. way, NW cor. NW, Sec. 139, Blk. 3, I.&G.N.R.R. Sur. ..... T.D. 3,225 ft; S.G. 3,125 ft; swabbing 125 bbls. per day; T.P. 3,180 ft.

McIlroy Oil Co.'s No. 1 Vallmert, 330 ft. ea. way out of SE cor. NW, Sec. 140, Blk. 3, I.&G.N. Sur. ..... Rig.

Mid-Continent Pet. Corp.'s No. 1 Laugham, 330 ft. S and W, W 231½ ac., N 310½ ac., Sec. 1, Blk. B-2, H.&G.N. Sur. ..... Spudding.

Operators Royalty Co.'s No. 1 Eddington, 330 ft. ea. way, NE cor. NW, Sec. 34, Blk. B-2, H.&G.N.R.R. Sur. ..... S.G. 2,655-93 ft; drlg. 3,001 ft; T.P. 2,937 ft; 500 ft. oil in hole.

Oil Operators' No. 1 Bowers, 330 ft. N, 330 ft. E, Sec. 93, Blk. B-2, H.&G.N. Sur. ..... Show oil and gas 2,400-17 ft.; S.O. 3,036-55 ft.; first gas 2,483 ft increase at 2,500 ft., 2,544 ft. and 2,950 ft.; S.D. 3,090 ft.

Panhandle Ref. Co.'s No. 4 Saunders, 990 ft. N and 330 ft. E, SW cor. E½ NE, Sec. 3, Blk. 1, A.C. H.&B. Sur. ..... Drlg. 990 ft.

Prairie O. & G. Co.'s No. 2 Laugham, 330 ft. S and E, NW cor., W 230.3 ac., of S 310.5 ac., Sec. 1, Blk. B-2, H.&G.N. Sur. ..... Rig.

Prairie O. & G. Co.'s No. 1 Worley, 330 ft. ea. way out of NW cor. NW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ..... Location.

Prairie O. & G. Co.'s No. 2 Worley, 330 ft. ea. way out of NE cor. NW, Sec. 36, Blk. 3, I.&G.N. Sur. ..... Location.

Prairie O. & G. Co.'s No. 3 Worley, 330 ft. ea. way out of SE cor. NW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ..... Location.

Phillips Pet. Co.'s No. 1 Wright-Wood, 330 ft. N, 990 ft. E, SW cor. N½ SW, Sec. 13, Blk. 3, I.&G.N.R. R. Sur. ..... Drlg. 1,970 ft.

Phillips Pet. Co.'s No. 2 Wright-Wood, 330 ft. N, 990 ft. W, SE cor. N½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,800 ft.

Phillips Pet. Co.'s No. 1 Combs-Worley (J. Fox), 330 ft. ea. way out of NW cor. NE, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ..... Rigging.

Prairie O. & G. Co.'s No. 1 Worley et al, 330 ft. ea. way out of NW cor. NW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ..... Building rig.

Prairie O. & G. Co.'s No. 2 Worley et al, 330 ft. ea. way out of NE cor. NW, Sec. 36, Blk. 3, I.&G.N. R.R. Sur. ..... Cellar.

Reynolds et als' No. 1 Webb, 330 ft. N, 380 ft. E, NW, Sec. 60, Blk. 25, H.&G.N.R.R. Sur. ..... Drlg. 1,390 ft.

Rieger & Steckoll's No. 1 Bohr, 330 ft. S and E, Sec. 37, Blk. B-3, H.&G.N. Sur. ..... S.D. 3,410 ft.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor., Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.

Stover and Shell's No. 1 Saunders, 990 ft. N 330 ft. E, N 100 ac. of W 149 ac., Sec. 3, B.&B. Sur. ..... 2,000,000 ft. gas 2,670-75 ft; T.D. 2,956 ft; to P.B. and shoot.

Sun Oil Co.'s No. 1 Combs-Worley, 330 ft. ea. way, SW cor. SE, Sec. 35, Blk. 3, I.&G.N. Sur. ..... Drlg. 903 ft.

The Texas Co.'s No. 1 Bell, 2,310 ft. N, 2,640 ft. W, Sec. 133, Blk. B-2, H.&G.N.R.R. Sur. ..... 1,500,000 ft. gas 2,800-2,910 ft. drlg. 3,426 ft.

The Texas Co.'s No. 15 Saunders, 330 ft. N and W, SE cor. W½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... S.D. 2,610 ft.

The Texas Co.'s No. 1 Wright, 330 ft. S and W, SE, Sec. 13, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,544 ft.

Travis & Reiger's No. 1 Mackie, 330 ft. N and E, Sec. 114, Blk. B-2, H.&G.N.R.R. Sur. ..... 16,000,000 ft. gas; T.P. 2,685 ft.; S.D. 3,343 ft.

Trippiehorn Oil Co.'s No. 1 Morse, 330 ft. S and W, SW SE, Sec. 17, Blk. A-9, H.&G.N.R.R. Sur. ..... S.D. 2,808 ft.; S.O. 2,710-24 ft.

Vulcan O. & G. Co.'s No. 1 Carpenter, 330 ft. N and W, W 80 ac., NW, Sec. 25, Blk. 25, H.&G.N.R.R. Sur. ..... T.D. 1,520 ft.; waiting on csg.

Wilcox-Pampa Oil Co.'s No. 13 Combs-Worley, 330 ft. ea. way out of NE cor. E½, Sec. 37, Blk. 3, I.&G. N. Sur. ..... S.D. 228 ft.

Wilson et als' No. 1 Heaston, 330 ft. S and W, Sec. 160, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,000 ft.

Wright Wilson, trustee's No. 1 Chapman, 175 ft. S and E lines, N½ NW, Sec. 69, Blk. 25, H.&G.N. Sur. ..... S.O. 2,685 ft.; S.D. 2,693 ft.

HARTLEY COUNTY

Dana O. & G. Co.'s No. 1 Fritz, C NE, Sec. 81, Blk. 44, H.&T.C.R.R. Sur. ..... Drlg. 3,077 ft.

HUTCHINSON COUNTY

Alamosa Oil Co.'s No. 4 Sanford, 310 ft. S, 320 ft. W, NE cor. N 160 ac., S 240 ac., Sec. 85, Blk. 46, H. &T.C. Sur. ..... S.O. and wtr. 3,010-11 ft; S.D. 3,095 ft.

Alexander et als' No. 1 Johnson, 1,709 ft. E, 330 ft. N, N 80 ac., E½, E. T. Tomlinson Sur. ..... Drlg. 2,050 ft.

Barnsdall Oil Co.'s No. 4 Prichard "A," C SW NW, Sec. 3, Blk. 4, D.&S.E. Sur. ..... Drlg. 2,892 ft.

Continental Oil Co.'s No. 1 Johnson-E, 330 ft. N and E, SW cor. SE, Sec. 5, Blk. I, B.&B. Sur. ..... Drlg. 2,365 ft.

Danciger O. & R. Co.'s No. 1 Cheatham, 330 ft. N and E, SW SE, Sec. 38, Blk. Y, A.&B. Sur. ..... Set 10-in. csg. 1,998 ft.

Danciger O. & R. Co.'s No. 3 Moore, 330 ft. S and E, NW W½ SE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. ..... 1,000 ft. oil in hole; T.P. 3,003-20 ft; S.D. 3,030 ft.

Danciger O. & G. Co.'s No. 4 Moore, 330 ft. N and E, SW cor. W½ SE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. ..... Rigging up standard tools; T.D. 2,825 ft.

Dixon Creek Oil Co.'s No. 1 Cheatham, 990 ft. E, 330 ft. S, N½ SE, Sec. 38, Blk. Y ..... S.D. 2,380 ft.

Dixon Creek Oil Co.'s No. 2 Cheatham, 330 ft. N, 1,650 ft. W, SE cor. N½ SE, Sec. 38, Blk. Y ..... Drlg. 1,845 ft.

Dixon Creek Oil Co.'s No. 1 Johnson Bros., 50 ft. S, 330 ft. W, NE cor. E 80 ac., J. Gammon Sur. ..... Drlg. 2,095 ft.

Gulf Prod. Co.'s No. 1 W. E. Herring, 1,320 ft. N, 1,395 ft. E, SW cor., Sec. 5, Blk. J, H.&G.N. Sur. ..... Drlg. 2,643 ft.

Gulf Prod. Co.'s No. 1 Herring-A, 990 ft. S, 990 ft. W, NE cor., George Bazon Sur. ..... S.D. 2,668 ft.

Huey et als' No. 3 Smith et al, 330 ft. N, 660 ft. W, S 40 ac., E 100 ac., SE, Sec. 12, Blk. Y ..... Drlg. by tools 2,702 ft.

Phillips Pet. Co.'s No. 2 Cheatham, 330 ft. S and E, NW cor. SE SE, Sec. 38, Blk. Y ..... Drlg. 2,415 ft.

Phillips Pet. Co.'s No. 1 Johnson-Burl, 330 ft. S and W, NE cor. W 240 ac., N 320 ac., Sec. 4, Blk. 1, B.&B. Sur. ..... Drlg. 1,885 ft.

Phillips Pet. Co.'s No. 1 Johnson-Juanita, 330 ft. N and W, SE cor. W½, Sec. 5, Blk. I, B.&B. Sur. ..... Drlg. 2,575 ft.

Phillips Pet. Co.'s No. 1 Johnson-Trammel, 930 ft. N, 330 ft. W, SE cor. W½ NW, Sec. 38, Blk. Y ..... Drlg. 2,305 ft.

Phillips Pet. Co.'s No. 1 Johnson-Mayer, 990 ft. N and 990 ft. W line, NE, Sec. 37, Blk. Y, A.&B. Sur. ..... Drlg. 2,205 ft.

Phillips Pet. Co.'s No. 1 Johnson-Royal, 330 ft. S and E, NW cor. E½ NW, Sec. 34, Blk. Y ..... Drlg. 2,135 ft.

Phillips Pet. Co.'s No. 1 Johnson-Rudy, 330 ft. W, 330 ft. S, SW SW, Sec. 30, Blk. Y, A.&B. Sur. ..... Rebuilding rig 2,130 ft.

Skelly Oil Co.'s No. 1 Byrd, 2,640 ft. E line, 3,960 ft. S line, W 3,094 ac., D. Luce Sur. ..... Drlg. 3,250 ft.

Spurlock et als' No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y ..... Drlg. 1,665 ft.

The Texas Co.'s No. 5 Moore, 330 ft. N and W, SE cor. SW, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. ..... Drlg. 830 ft.

Texarado Oil Co.'s No. 2 Sanford, 330 ft. S, 990 ft. W, NE cor. N 80 ac., S 160 ac., Sec. 83, Blk. 46, H.& T.C.R.R. Sur. ..... C.O. 2,000 ft.

LAMB COUNTY

Graham O. & G. Co. et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... S.D. 4,408 ft; fishing.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... C.O. 3,750 ft.

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... Fishing 4,954 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Canadian River Gas Co.'s No. 1-C Sneed, 660 ft. N and E, SW, Sec. 46, Blk. 6-T, T.&N.O.R.R. Sur. ..... Drlg. 2,300 ft.

Fritch O. & G. Co.'s No. 1 Lee Bivins, C N 40 ac., N 160 ac., Sec. 4, Geo. Mahan Sur. ..... 2,000,000 ft. gas 1,550-65 ft; T.D. 3,212 ft; S.O. 3,188 ft; shot 40 qts. from 3,182-3,202 ft; no results; S.D.

Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 22, Blk. P.Mc., E.L.R.R. Sur. ..... Red rock; 60,000,000 ft. gas; S.D. 2,815 ft.

Operators Royalty Co. et als' No. 1 Jones, 330 ft. S line, 330 ft. E line, SW SW, Sec. 164, Blk. 3-B, T.&N.O.R.R. Sur. ..... Fishing 3,110 ft.

Red River Gas Co.'s No. 1 J. M. Shelton, 330 ft. ea. way from SE cor., Sec. 52, Blk. 3, G.&M. Sur. ..... U.R. 6-in. csg. 2,810 ft.

MOTLEY COUNTY

Explin. Co.'s No. 6 Matador, 330 ft. N line, 330 ft. E line, Sec. 132, Blk. M ..... S.D. 4,011 ft.

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 580 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1-N Masterson, 330 ft. E, 1,320 ft. S, Sec. 17, Blk. 3, G.&M.R.R. Sur. ..... Drlg. 1,750 ft.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 ..... S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. A-5 ..... Shot 10 qts. 5,270-93 ft; S.O. 5,288 ft; S.D. 5,992 ft.

TERRY COUNTY

Atlantic O. P. Co. et als' No. 1 Carlisle, 990 ft. S and E, Sec. 58, Blk. E, E.L.R.R. Sur. ..... Location.

WHEELER COUNTY

Dunaway Bros.' No. 1 Worley, 330 ft. S and W, NE cor. NW, Sec. 39, Blk. 24, H.&G.N.R.R. Sur. ..... Drlg. 1,700 ft.

Lone Star Gas Co.'s No. 1 Brown, C NW NE, Sec. 53, Blk. 23, H.&G.N.R.R. Sur. ..... Location.

Lone Star Gas Co.'s No. 1 Fuller, C SW NE, Sec. 71, Blk. 17, H.&G.N.R.R. Sur. ..... Building rig.

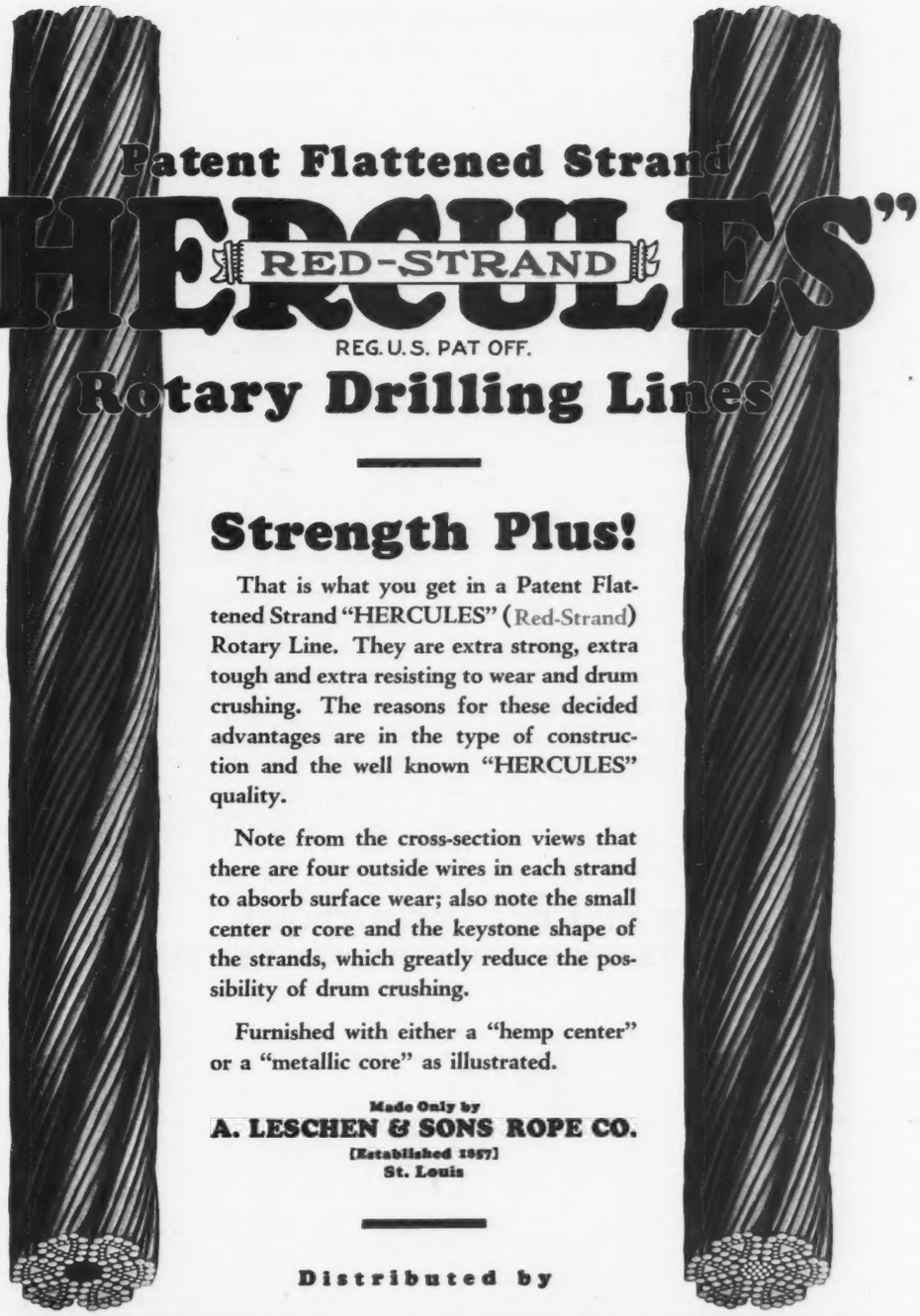
Lone Star Gas Co.'s No. 2 Hicks (Martin), C NW NE, Sec. 52, Blk. 17, H.&G.N.R.R. Sur. ..... Location.

Lone Star Gas Co.'s No. 1 Nickell, C NW NW, Sec. 64, Blk. 17, H.&G.N.R.R. Sur. ..... Location.

Lone Star Gas Co.'s No. 1 Wofford, C SE SW, Sec. 68, Blk. 17, H.&T.N.R.R. Sur. ..... Moving in tools.

Lone Star Gas Co.'s No. 1 Ridinger, C NW NW, Sec. 65, Blk. 17, H.&G.N. Sur. ..... Rig on ground.

Wischkamper et als' No. 2 Brown, C SE NE, Sec. 53, Blk. 23, H.&G.N.R.R. Sur. ..... Drlg. 1,200 ft.



Patent Flattened Strand

"HERCULES"

RED-STRAND

REG. U.S. PAT OFF.

Rotary Drilling Lines

Strength Plus!

That is what you get in a Patent Flattened Strand "HERCULES" (Red-Strand) Rotary Line. They are extra strong, extra tough and extra resisting to wear and drum crushing. The reasons for these decided advantages are in the type of construction and the well known "HERCULES" quality.

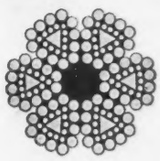
Note from the cross-section views that there are four outside wires in each strand to absorb surface wear; also note the small center or core and the keystone shape of the strands, which greatly reduce the possibility of drum crushing.

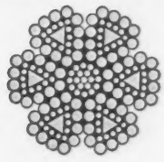
Furnished with either a "hemp center" or a "metallic core" as illustrated.

Made Only by
A. LESCHEN & SONS ROPE CO.
[Established 1857]
St. Louis

Distributed by

OIL WELL SUPPLY CO.





Fair Producers in Muskingum County

Guernsey County Reports 110-Bbl. Completion. Good Gasser in Tuscarawas County. New West Virginia Tests

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Mar. 24.—In the NE. Section 1, Wheeling Township, Guernsey County, the East Ohio Producing & Refining Co. has completed in the Niagara lime a test on the Joseph H. Gadd farm. It produced 110 bbls. the first 24 hours from a total depth of 3,570 feet. In the NE. Section 20, Perry Township, Muskingum County, the Atha Oil Co. completed in the Big lime a test on the Lewis M. Bryan farm. It produced 60 bbls. the first 24 hours.

In NW. Section 3, of Clay Township, Muskingum County, William Cline & Co. have completed and shot in the Clinton sand No. 5 on the Robinson-Ransbottom farm. It produced 160 bbls. the first 24 hours. In the NE. Section 11, Wheeling Township, Muskingum County, the Wiser Oil Co. completed in the Niagara lime No. 3 on the Amanda Gray farm. It produced 50 bbls. the first 24 hours after drilled into the Niagara lime pay. The total depth of the well is 3,560 feet.

SOUTHEAST OHIO

In the NW. Lot No. 36, Washington Township, Tuscarawas County, the Ohio Fuel Gas Co. completed in the Niagara lime a test on the David R. Meek farm. It is a gasser good for 6,500,000 feet. In the SW. Section 24, Pike Township, Coshocton County, Spindler, Donan & Co. completed in the Clinton sand No. 6 on the Wolford farm, showing for a 10-bbl. pumper.

The Pure Oil Co. completed No. 6 on the Hoover Brothers' farm in Section 6, Perry Township, Licking County. It has a very small show of oil in the Clinton sand and may be abandoned. In the Fisher Pool, Section 30, Alexander Township, Athens County, the Townsend Oil & Gas Co. has a very light pumper in the Cow Run sand at No. 10 on the Sarah E. Penrod farm.

In the NE. Section 32, Marion Township, Noble County, Harry Clymer and others have a light gasser in the Berea grit on the F. G. Cleveland farm. In the SW. Section 13, Sutton Township, Meigs County, the Twenty-Five Association, Inc., completed in the shale a second test on the Lucius Holter farm. It is a light gasser at a total depth of 3,305 feet.

In the SW. Section 3, Clay district, Muskingum County, H. H. Baleman & Co. completed and shot in the Clinton sand a test on the Gandas-Debkins-Leming lots. It produced 30 bbls. the first 24 hours. In the SE. Section 33, Newton Township, the Ohio Fuel Gas Co. has a light gasser in the Clinton sand on the Lloyd McCoy farm.

In Section 34, Mohican Township, Ashland County, C. P. Mellizer & Co. completed in the Berea grit No. 5 on the Alder-Alexander farm, good for 15 bbls. a day with a fair gas pressure. In the SE. Section 13, Vermillion Township, the Great Lakes Oil Co. has a 4-bbl. pumper in the Berea grit at a second test on the Doctor Moffett farm.

Washington County

In Grandview Township, Washington County, Thomas McVey & Co. completed in the Keener sand No. 5 on the D. W. Burnett farm. It is a 15-bbl. pumper. In the village of Newport, Section 25, Newport Township, the Kesselring Oil Co. completed in the shale a very light pumper on the Henry Kesselring heirs' farm.

At Bollin Mills, Section 33, Knox Township, Vinton County, the Wittmer Oil & Gas Properties Co. completed in the Clinton sand a gasser on the Thomas Herrold farm, good for 2,000,000 feet. In Section 9, Lake Township, Ashland County, the Great Lakes Oil Co. has a Berea grit duster at a second test on the John P. Smith farm.

In Section 30, Alexander Township, Athens County, the Townsend Oil & Gas Co.'s No. 9 on the Sarah E. Penrod farm is a 6-bbl. pumper in the Berea grit. In Lot 92, Athens Township, Gross & Frebault have a light pumper on the Hellen H. Vanhorees & Co. farm.

In Section 4, Knox Township, Vinton County, the Co-operative Oil Co. has a light pumper in the same formation on the Robert Nelson farm. In Section 3, same township, the Hope Construction & Refining Co. is drilling a second test on the Daniel Dass farm.

Dusters in Meigs County

In Sutton Township, Meigs County, the Twenty-Five Association, Inc., has a duster at a second test on the Stanley Holter farm. In the same township, Delbert Bachelor has a duster on the John and Nellie Arnett farm. The Southern Ohio Petroleum Co. has a light gasser in the Berea grit on the Harry Potts farm.

In Section 28, Aurelius Township, Washington County, Jerry Buckley is due in the Berea grit on the Clarence Wagner farm. In Salem Township, J. C. Carner & Co. are drilling on the Herman Paeks farm. In Newport Township the Kesselring Oil Co. has a rig up on the Henry Kesselring farm. In Grandview Township, Thomas McEvoy and others have a rig up on the D. W. Barrett farm. In the same township, the Hope Construction & Refining Co. is drilling on the A. Lovell farm.

In Section 8, Palmer Township, Washington County, Robert W. Penny & Co. have a light pumper at No. 8 on the Myron E. Leasure farm. In the same township, C. S. Hixon & Co. have a light pumper at No. 8 on the Willis E. Ellis farm. In Independence Township, J. T. Hall and others have a duster on the Isaac Potter farm. Herlan & Co. had the same luck at No. 33 on the J. H. Ward farm.

In the NE. Section 5, Harrison Township, Perry County, Miracle, McGinnis & Co. completed and shot in the Clinton sand a test on the Woods-Gable lots. It produced 50 bbls. the first 24 hours. In Section 28, York Township, Morgan County, the Pure Oil Co.'s No. 7 on the Wilbert Rush farm is a 5-bbl. pumper in the Berea grit.

In Lot 293, Sutton Township, Meigs County, the Southeast Ohio Petroleum Co. has started to drill on the Southeastern Ohio Petroleum Co.'s farm. In the same township the Twenty-Five Association, Inc., is drilling down from the Cow Run sand its test on the J. E. Stobert farm.

WEST VIRGINIA

In Central district, Doddridge County, Wilson & Broadwater completed in the Big Injun sand a test on the Arthur Yeater farm. It is located on Long Run and is a gasser good for 1,500,000 feet. On Gillespie Run, Murphy District, the Hope Construction & Refining Co. completed in the Berea grit a second test on the L. A. Cain farm. It is a gasser good for 500,000 feet.

In Church district, Wetzel County, the Pittsburgh & West Virginia Gas Co. completed No. 4 on the Caroline Hibbs farm. It is a gasser in the Big Injun sand.

In Mannington district, Marion County, the Manufactures Light & Heat Co. is drilling on top of the 30-foot sand on the T. B. Yost farm.

In Clay district, Monongalia County, West Virginia, the Chartiers Oil Co. completed in the fifth sand a second test on the Eunice V. Wilson farm. It is a 10-bbl. pumper at a total depth of 3,237 feet. On Anna Moriah Creek, Sheridan district, Calhoun County, B. J. Crowley completed in the Big Injun sand No. 3 on the Jefferson Bennett farm. It is showing for a 5-bbl. pumper.

On West Fork, Spencer district, Roane County, the Federal Oil & Gas Co. completed No. 40 on the Pell, Newman & Roberts tract and is reported a duster. In Clay district, Ritchie County, Hannaghan & Hanlan have a very light pumper on the C. C. Weekley farm. In Clay district, Monongalia County, the Philadelphia Gas Co.'s No. 4 on the Elias Moore farm is a 6-bbl. pumper in the fifth sand.

Calhoun County

In Sherman district, Calhoun County, the Hope Natural Gas Co.'s No. 7,431 on the J. B. Huffman farm is a gasser. In Lee district, F. F. McIntosh has a gasser in the Big Injun sand at a second test on the J. Duskey farm. In Center district, W. H. Bickel's test on the Jasper Elliott farm is a duster in the Big Injun sand. In the same district, L. P. Bickel's second test on the Martha Stump heirs' farm is a duster.

On Frozen Camp Run, Curtis district, Roane County, 3,000 feet north of the Virginian Gasoline & Oil Co.'s test on the W. C. Whited farm, the United Fuel Gas Co. has a 15-bbl. pumper in the salt sand on the M. Hart farm.

On the waters of Little Flint Creek, Grant district, Doddridge County, the Hope Construction & Refining Co. completed in the Big Injun sand No. 20 on the R. Spencaer farm. It is a natural producer good for 4 bbls. a day. On Doctors Creek, Big Sandy district, Kanawha County, the Virginian Gasoline & Oil Co. has shot No. 7 on the William Nichols farm, in the Weir sand, increasing its production from 2 to 10 bbls. a week. On Big Creek, same district, the same company shot in the Weir sand its first test on the Joseph Huffman heirs' farm, increasing its production from 4 to 8 bbls. a week.

New Work Due in the Sand

In Battelle district, Monongalia County, the Hope Natural Gas Co. is due in the sand on the Henry Haught farm. In the same district, E. Johnson & Co. are due in the sand on the Elias Cox farm. In grant district, Ritchie County, the Mid-Penn Oil Co. is drilling deeper No. 8 on the G. T. Layfield farm. In the same district, the New York Petroleum Co. is drilling deeper its old test on the E. Stephens farm. In McClellan district, Doddridge County, the Little Five Oil Co. is rigging up on the Isaac Riffee farm. In McKim district, Pleasants County, Sud Powell has completed a rig on the George Reed farm. In Tucker district, Wirt County, Hart & Co. are fishing on the Charles Wine farm. In Grant district, Ritchie County, the Hope Natural Gas Co. is rigging up on the Levina McFarlan farm.

Starting Tests

In West Union district, Doddridge County, Cickafoose & Swadey are rigging up on the John Batton farm. In Troy district, Gilmer County, the Hope Natural Gas Co. is building a rig on the Lydia Gillespie farm. In Cameron district, Marshall County, the Manufacturers Light & Heat Co. is rigging up on the D. A. Matthews farm. In Liberty dis-

(Continued on Page 118)

END OF NINETY-DAY SHUTDOWN SETS OPERATORS BUSY IN KENTUCKY

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Mar. 24.—The 90-day shut down of development work in the Tri-County Field of Ohio, Daviess and Hancock Counties, ended March 15, and operators are getting busy as many drilling machines have been moved to locations while others have already started spudding and from now on it looks as though a great many holes will be drilled from week to week. It is hoped operators do not overdo the new work, as storage facilities are pretty well filled, not alone of the pipe lines, but the refiners storage is such that they have no place to store crude, as some of the plants are shut down, or not taking as much crude. According to information received one of the leading pipe lines is getting more than 1,000 bbls. a day that it has no market for, nor storage facilities and in that case, if large wells are found in the Stray sands, like were being found last fall, or just before the shut-down, it will mean the construction of storage, which naturally means a cut in crude prices.

The Owensboro Messenger-Inquirer states: "A note of warning was sounded Saturday March 8, by W. F. McCray, superintendent here for the Illinois Pipe Line Co., which serves the field, stating that since the closing down of the refinery of the Standard Oil Co. of Kentucky, which daily consumed 3,000 bbls. of oil from this field, a surplus was piling up in the company's tanks which may be ominous for the good of the field. A surplus of 1,000 bbls. per day has been stored for some time now over the consumption from the field, Mr. McCray said, and the capacity of the storage tanks will soon be exhausted if heavy development is started before the spring season sets in.

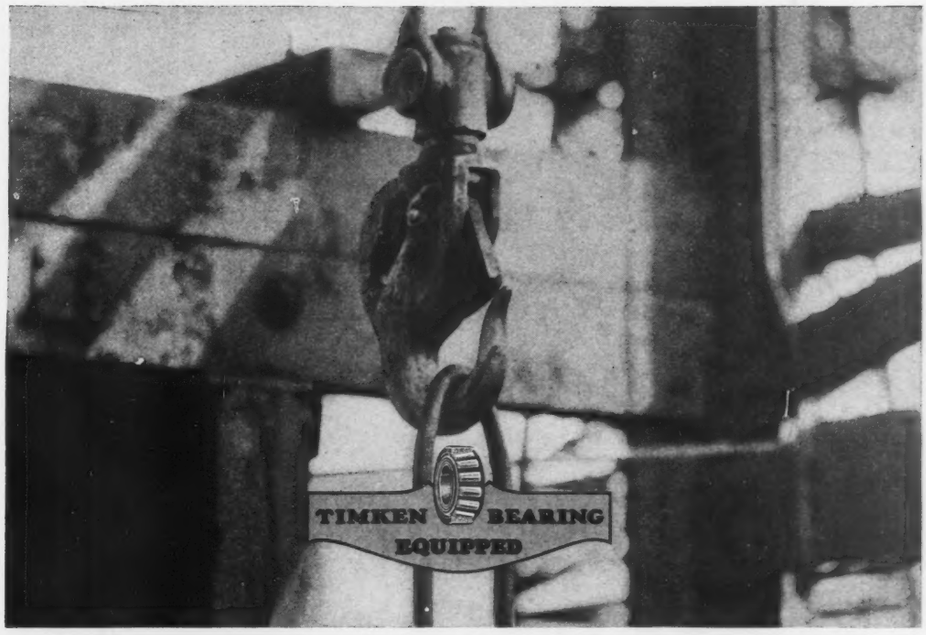
One of the new spots in Ohio County that is looking like a nice shallow field is near the hamlet of Magan, and the next few weeks will see a heavy play there, as much acreage has been taken under leases recently and around a dozen machines are already chugging away and others moving in daily. The Ohio Oil Co. is drilling on the Calloway farm near the Basham School, on the Magan area and got a good showing in the Jett sand, but went to the Jones sand, and when red rock was found, the drillers were given orders to go deeper for other known producing sands and give the lease a thorough test.

One area of the Tri-County Field that made an excellent oil showing a short time ago has developed into a flash in the pan. This well was drilled by R. W. McMahon on the Roy Hudson farm, in the corner of Daviess County, where McLean and Ohio Counties meet. When drilled in it was rated at 25 bbls. and looked like a new pool had been found, but its production went off like a flash and it has been abandoned.

Ohio County

The best of the late completions in Ohio County is Hupp, Duff and others' No. 1 on the W. J. Dawson farm, in the territory between Buford and the Bar-

(Continued on Page 118)



Let The Weight Be What It May—D & B Simplex Hooks Are Timken-Equipped

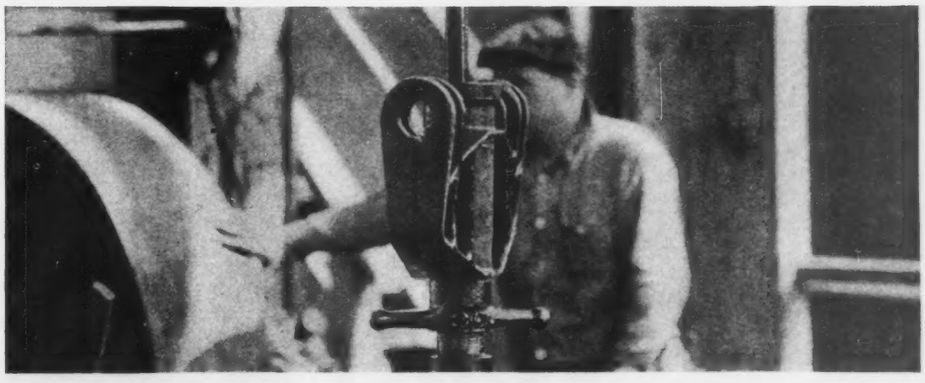
Oil well hooks should be able to safely sustain weights far in excess of those ever likely to be imposed upon them. At the same time, they must swivel freely and smoothly under any and every load.

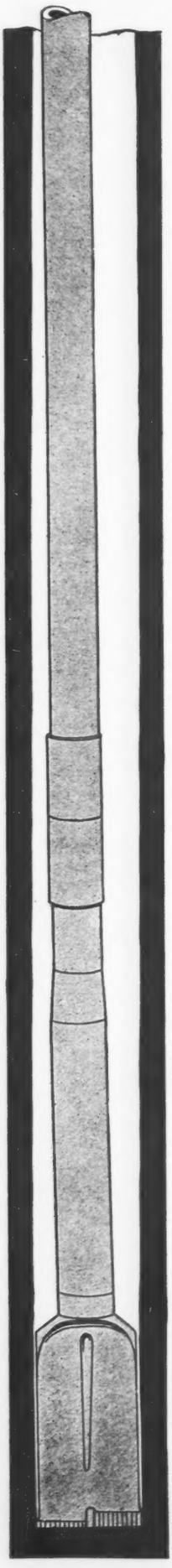
This means that the swivel bearings must have an unusual combination of anti-friction and load-carrying capacities. With unerring judgment, the manufacturers of D & B Simplex Safety Oil Well Hooks, the D & B Pump & Supply Company, Los Angeles, (a division of Emsco Derrick & Equipment Company) have placed the responsibility where it rightly belongs—on Timken tapered roller bearings.

In common with the makers of all types of oil field equipment, they have found in the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken-made steel, a combination of abilities which no other type of bearing can duplicate—for Timkens fight friction to a finish, make lubrication negligible, carry radial, thrust and combined loads with sureness, add years to the life of the equipment in which they are used and take the menace out of maintenance.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**



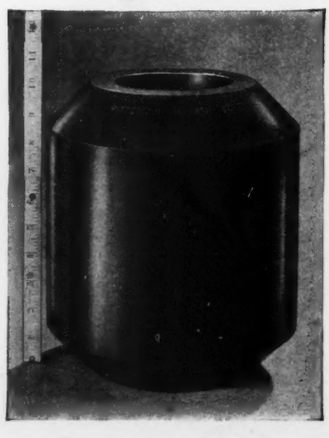


This is the way to drill *crooked* hole

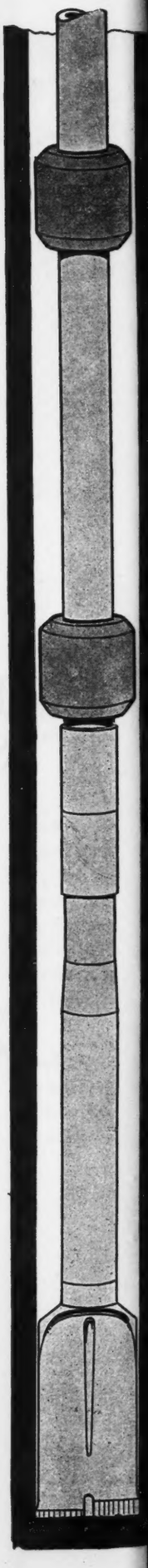
AND

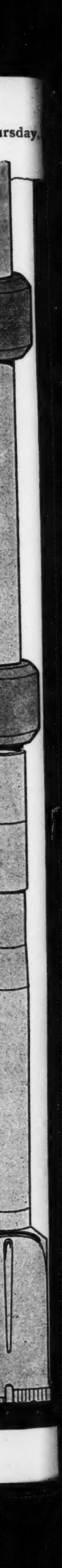
this is the way to drill *straight* hole

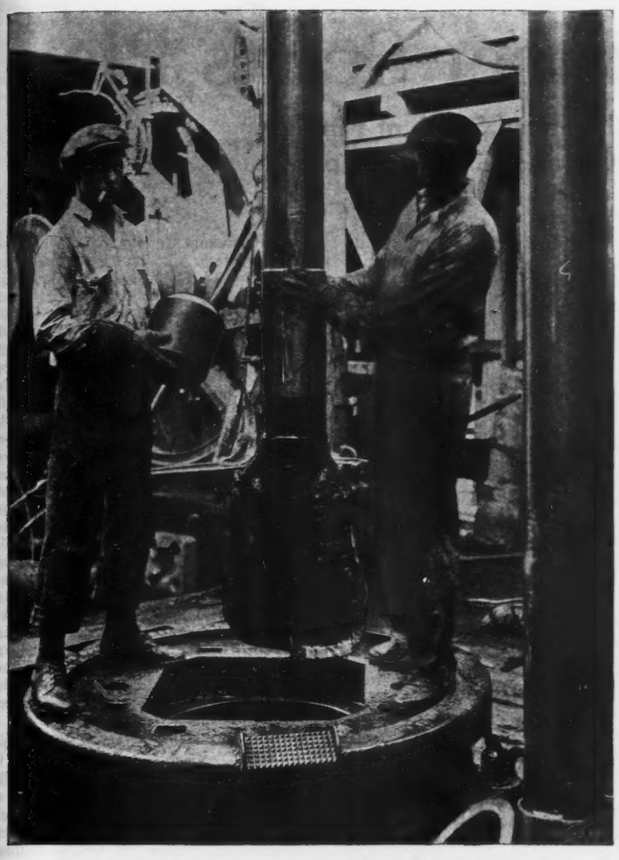
Fully Patented



Bettis Drill Stabilizers





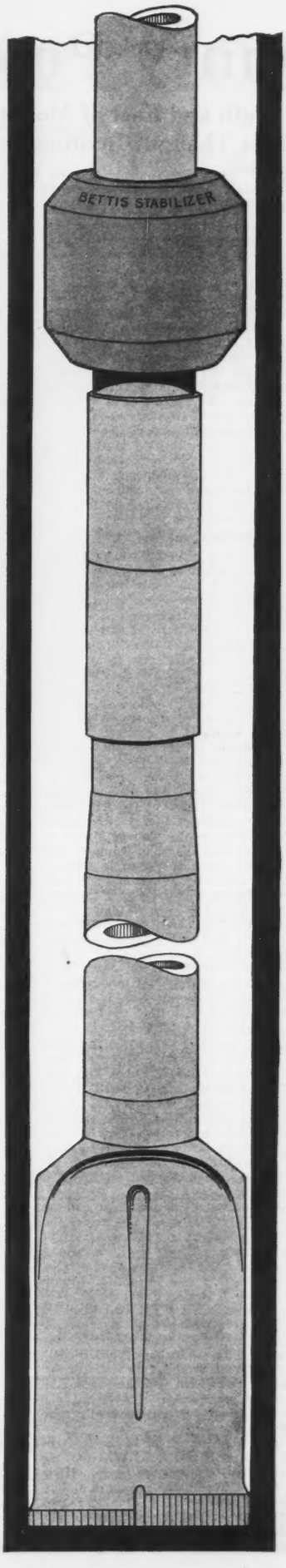


View of Drillers in Long Beach field ready to install Bettis Drill Stabilizer on string.

Now drill in open formation safely

Instead of wandering "off center" and following the line of least resistance your drill will dig straight down if the drilling string is supported and protected with Bettis Drill Stabilizers. Without support, the string may have a tendency to corkscrew and set up vibration that rapidly fatigues the steel, pounds the formation and may lead to caving. The application of Bettis Drill Stabilizers keeps the drill pipe and drill stem in proper alignment by cushioning the entire line from the bottom of the casing to drill. Just as Bettis Protectors are the necessary protection within the casing, these Stabilizers are equally necessary in open hole.

Ask for new literature



-the newest development in controlled drilling

"Best bet yet"

PATTERSON-BALLAGH CORPORATION
Insurance Exchange Building
Los Angeles

Texas and Gulf Coast Distributors:
BETTIS SALES CO.
616 Public National Bank Bldg.,
Houston

Oklahoma Distributors:
BAILEY & BECKER COMPANY
410 Thompson Bldg.,
Tulsa

New York Office: 39 Cortlandt St.

Carried in stock at Los Angeles, Santa Fe Springs, Ventura, Kettleman Hills, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas; Calgary, Alberta, Canada; New York City.

Hardin County Producer Starts Play

Territory South and East of Mount Blanchard, South of Findlay, Ohio, Is Now Thought Inviting for Oil and Gas Development

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Mar. 24.—But few completions are reported from the various divisions of the Central West, outside of the Central Ohio area, where the drill is moving along as of yore and looks as though it will continue during the entire year.

The old Lima Field of northwestern Ohio still has what looks like a large amount of territory that looks inviting for both oil and gas, but has had little test work. That is the territory south and east of Mount Blanchard, south of Findlay, where a well was drilled back in the nineties that made a fair showing of oil. Since then numerous gas wells have been drilled over a wide area southeast of Mount Blanchard, this territory extending over the northern part of Hardin County, and around Forest, where some very fair gas producers were found. The latest sensation in that end of the field is the well reported in the latest review of the Lima Field, which was drilled by the Kemrow Co. on the Sidney Sites farm, Section 14, Cessna Township, Hardin County, about 5 miles northwest of Kenton. The Trenton was topped at 1,395 feet and drilled into the oil and gas at 46 feet in the Trenton at a total depth of 1,441 feet, the well producing 40 bbls. of oil in 24 hours and showing close around 250,000 feet of gas. The nearest production to this wildcat venture is in the old Roundhead Field, same county. The well looks so good that the Geiger Oil Co. has started a test on the Grant Geiger farm, Section 13, Cessna Township, just east of the Sites well. The Roundhead Oil & Gas Co. is starting No. 8 on the Erwin Hites lease in McDonald Township, Hardin County.

Tiffin Field

Another interesting well of the week was in the Tiffin Field, where the Kansas Oil & Gas Co.'s second test, 600 feet from the south line and 1,000 feet from the west line of the C. P. Dillon, Section 1, Jackson Township, Seneca County, topped the Trenton at 1,299 feet and went 203 feet in the Trenton to a total depth of 1,402 feet, making 40 bbls. initial.

Lawrence Dickleman of Forest gives a record of the Sidney Sites well which is located at an angle of 45° southwest of the wells drilled on the Lost Dome Field at Patterson and Forest, in Hardin County, a year ago, but is still 5 miles beyond the McEllree wells, which were the farthest south producing wells; owner, the Kemrow Co. of Wooster, Ohio; contractors, Henry & Kurtzs; drive pipe, 190 feet; casing, 400 feet; top of Trenton, 1,404 feet; finished at 1,440 feet; pay, 14 feet in Trenton; shot with 90 quarts; results, 250,000 feet of gas and 40 bbls. of oil. This well is one-quarter mile directly west from the No. 1 Robinson well drilled 10 years ago by the Ohio Public Service Co. It is also about a half mile north of Robinson's No. 2. Top of Trenton in No. 1 Robinson was 1,392 feet, and top of Trenton in No. 2 Robinson was 1,387 feet. The No. 1 A. H. Fulton is a gas well which was drilled in a good many years ago, and the Fulton well is one-half mile due southwest of the new Sites farm well. The No. 1 Margaret Fulton well, sometimes called the Sponsler well, is about three-quarters of a mile due south of the Sites well. The Illinois Pipe Line Co. has a main line within one-half mile of the Sites well; also the Ohio Fuel Gas Co. has a main line for gas in the same trench or right of way, and both these companies intend to hook up this new well immediately. The Kemrow Co. intends to put down two more wells immediately. The Sites well is in the NW SW Section 14, and the test now drilling by Grant Geiger and others on the Grant Geiger 80 acres is the E half SE Section 12, Cessna Township, and 2 miles east and 1 mile north of the Sites producer. This new well of Geiger's is being drilled on the strength of a pioneer's persistent statement that a well was drilled there at one time which flowed but was abandoned. Abbott Brothers are the contractors on the Geiger test. The Geiger farm test is 3½ miles due southwest of the wells drilled at Patterson and Forest last year. The two Robinson and Fulton wells mentioned have put gas in the old Ohio Public Service lines for 10 years and are still doing so.

Territory May Get Play

With this new Sidney Sites well being drilled in it would seem that the whole territory, which has really never had a genuine play, should show activity during 1930. The good gas wells 1½ miles due south of the village of Forest were brought in during 1929, also the gas wells 3 miles due north of Forest, in Wyandot County, sometimes called the Wharton Field, and in 1930 the wells 3 to 4 miles north of Forest and 1 mile west of Forest, sometimes called the Mount Blanchard Field, where there are wells on the Hickle, Howard, Bennett, two on the Bristol, and two on the O. S. Bell and one on the Etherton. Then come wells on the Callahan, Moore and Briggs farms, on the Lincoln Highway, 2½ miles west and 2 miles north of Forest. Production has been found as far west of Forest as 7 miles, reaching almost to Dunkirk. The wells drilled north of Forest in what is sometimes called the Wharton Field were Majory Adams, Kear, Carey Pickett, Jake Kechley and Rea Kramer. The wells drilled 1½ miles south of Forest were Nos. 1, 2, 3 and 4 Dickleman, Nos. 1 and 2 McNutt, No. 1 Baker, No. 1 Wilmouth, No. 1 Martin Hayes, No. 1 John Stevens, No. 1 Aaron McKinley, Nos. 1 and 2 Frank McKinley, Nos. 1, 2 and 3 Kurtz (these were drilled in 1929 and 1930), also No. 3 A. E. Price.

Leasing has been done by the Ohio Fuel Gas Co., East Ohio Gas Co., Harmon & Watts, Leonard Oil & Gas Co., the Gordon Oil Co., H. C. Mick, Talbot & Ryan, Wyoming Gas & Oil Co., Ltd.; leasing and holding leases from south of Wharton and Mount Blanchard through Forest and Patterson, south to the new well, south of the Fairview Church on the Old Harding Highway and as far west as Dola, Ohio.

The old wells drilled near Mount Blanchard about 35 years ago are as follows: No. 1 Leighty; Shoemaker, four wells west and one east of village; No. 1 Harry Greer; No. 1 Harry George; No. 1 Sol Schaefer; Nos. 1 and 2 Litzenberger; No. 1 Doctor Fahl; No. 1 William Patterson; No. 1 Ethel Shoemaker; No. 1 Nora Sampson west of the river, and No. 2 east of the river; No. 1 Marion Beck; No. 1 David Bishop; No. 1 Siddell, making a total of about 20 wells drilled at Mount Blanchard in years back. All the old Mount Blanchard wells made a little gas or oil but nothing really commercial.

With a showing of oil in most of the wells north of Forest, near Wharton, the gas and show of oil on the Lincoln Highway west of Forest, the gas south of Patterson and west almost to Dunkirk, Ohio, and the new oil and gas well on the Sidney Sites farm, just brought in, together with the old Ed Young 10-bbl. well drilled in just 1 mile west of Forest it would seem that perhaps the time is now ripe for a full development of this entire territory which centers around Forest except to the east. If active leasing is any indication of this development, perhaps this acreage, which is only about 15 to 20 miles from the old Findlay Field and less from the old Lovell or Crawford Field, after being overlooked in the heart of Ohio oil territory, is now ready to be developed.

CENTRAL OHIO

The Central Ohio Fields are holding their own so far as new development work is concerned, and some fairly good oil and gas wells are being brought in. This is about the time of year that the large gas companies slack up in drilling operations to some extent for a month or so, but there is little change in the number of wells under way, along with new locations.

In Ashland County, Robinson and others' No. 3 on the John S. Moffett, Section 30, Vermillion Township, is rated good for about 3 bbls. from the Berea sand from 808-21 feet. Ohio Fuel Gas Co.'s No. 2-4,994 Alva Shriner, Section 1, Montgomery Township, is a fairly good gas producer. Meltzer and others have an oil showing in No. 5 Michael Ott, Lot 34, Mohican Township, in the Berea from 745-95 feet, but its value as a producer will not be known until it is given a test.

In Medina County the Ohio Fuel Gas Co. has started work on its No. 1-4,995 Anna Sclepchak farm, Section 33, Lafayette Township.

In Lorain County the Wiser Oil Co. brought in a nice gas well on the Joseph Dewhurt, Lot 5, Carlisle Township, and Dempsey & McGrath have a nice gas well in No. 1 on the Joseph Pitts, Lot 31, Ridgeville Township, same county.

In Holmes County the Preston Oil Co.'s No. 5-1,386 O. C. Close, Lot 4, Hardy Township, is reported dry, while the East Ohio Gas Co.'s test on the M. Gamble, Section 4, is a fair gas well, with two pay sands to draw from. The first pay was from 3,395-3,405 feet and the second pay from 3,433-45 feet.

In Richland County, Monroe Township, Ohio Fuel Gas Co.'s No. 1-4,944 Millie Oakes, Section 26, was dry in the Clinton formation.

In Knox County the Ohio Fuel Gas Co. got a fair gas well in No. 1-4,878. J. R. Walton, Section 15, Jefferson Township. In Brown Township, same company made locations for No. 4 David Deck, Lot 39; No. 1 William H. Doup, Lot 5, and is putting a rig over No. 2-4,546 B. B. Workman, Lot 38, and will drill it deeper. East Ohio Gas Co. made a location on the Walter Workman, Lot 37, and H. E. Perkins is drilling his No. 1 D. T. Rose, Lot 21, from the Berea sand to the Clinton lime.

In Summitt County, F. A. Brendall and others' No. 2 Ed Dunn, Section 35, Franklin Township, has an excellent gas producer from 3,932-65 feet. Same firm is drilling on the Cyrus Miller, Section 13, Coventry Township. In Greene Township, Stoltz Oil & Gas Corp. got an average gas well in No. 2 on the Katherine Selzer, Section 7, in the Newberg sand from 3,502-17 feet. East Ohio Gas Co. made a location on the Ada Weaver, Section 25, same township, and F. A. Brendall and others are drilling on the A. H. Cummins, Section 6, same township.

In Licking County, Fallsburg Township, the Wittmer Properties, trustee, is drilling on the Amos Van Winkle, Section 13. Hope Construction & Refining Co. made a location on the Miner-Obannon, Section 16, Hanover Township.

In Muskingum County, Wittmer Properties, trustee's test on the Thomas B. Chaplin in the fourth quarter, Washington Township, produced 50 bbls. initial from the Clinton formation from 4,020-64 feet. Ohio Fuel Gas Co.'s No. 1-4,966 F. L. Varner farm, Section 5, Hopewell Township, produced 160 bbls. the first 24 hours from 3,124-79 feet. Craig Adair and others drilled in a very good gas well in No. 1 on the Wesley Cox, Section 3, Clay Township. The Atha Co.'s test on the L. M. Bryan, Section 20, Perry Township, produced 50 bbls. initial from the Niagara formation at a total depth of 3,190 feet. Wittmer Properties Co. is drilling deeper No. 1 on the Thomas Treahay and others' farm, Section 5, same township, and made a location on the James Moore, Section 12, same township. The Pure Oil Co. made a location on the Albert Holman, Section 12, Jackson Township, same county. In Licking Township the Wehrle Gas Co. is drilling on the G. E. Wells, Section 7, and the Hope Construction & Refining Co. made a location on the Nancy Taylor, Section 2, same township.

In Athens County, Ames Township, Fox & Mosure have a dry hole in No. 6 Robert Bean, Section 13, and are drilling No. 7. Ohio Fuel Gas Co. made a location on the J. L. Jeffers, fractional Section 19, Lodi Township. In Alexander Township the Wiser Oil Co. is drilling No. 1 on the Charles V. O'Neal, Section 35, and the Townsend Oil & Gas Co. is drilling No. 8 Isaac Castle, Section 30.

In Tuscarawas County, Oxford Township, the Gordon Oil Co. is drilling No. 1 Sarah E. Ripley, Section 21.

In Stark County, F. A. Brendall and others have an excellent gas well in No. 2 on the Charles Smith, Section 3, Lawrence Township, from 3,986-4,008 feet.

In Guernsey County, Wheeling Township, the North Salem Oil & Gas Co.'s No. 1 John A. Baird, Section 11, is credited with an initial of 30 bbls. from the Niagara lime formation from 3,676-82 feet. East Ohio Gas Co. is drilling No. 5 E. C. Quillan, Section 11, also No. 8 Charles and Amada Gray, Section 10. Ohio Fuel Gas Co. made a location for a second test on the Loren C. Stocker, Section 9.

Only one completion was reported from Morgan County, the Ohio Fuel Gas Co.'s No. 1-4,941 Frank Hammond farm, Lot 17, Marion Township, and it was dry in both the Salt and Maxon sands. Ohio Fuel Gas Co. is drilling No. 1-4,997 E. A. Gladden, Section 16, Penn Township.

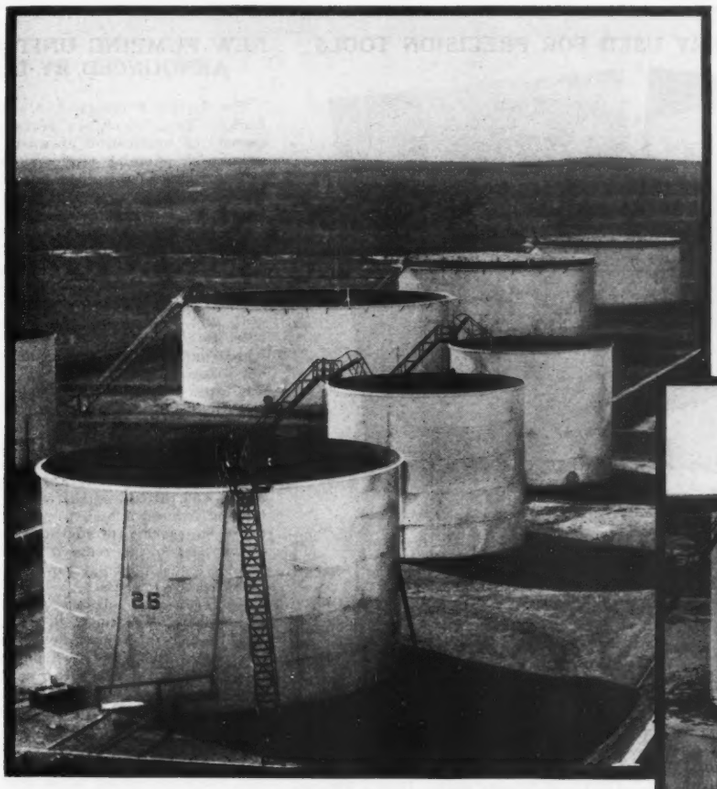
INDIANA

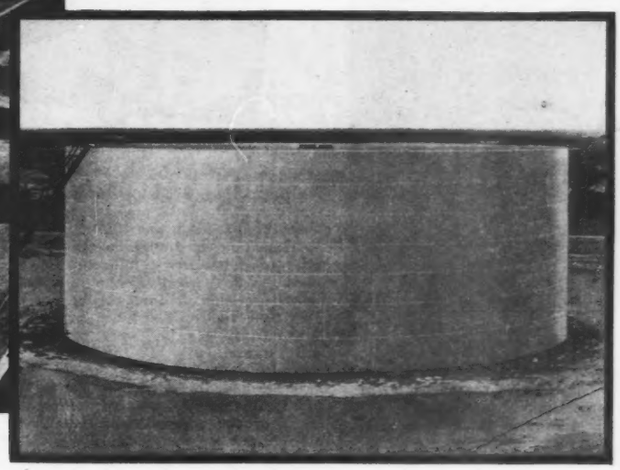
The Petroleum Exploration Co. and the Ohio Oil Co. have drilled in their deep test, 750 feet from the south line and 2,650 feet from the west line of the Mary M. Young farm, in the SW SE Section 7, Benton Township, Monroe County, 2,000 feet from the gas well on the Mary E. Shirley farm. The Young heirs farm well was drilled to a total depth of 2,102 feet and into the Trenton lime formation and is a dry hole. This well started with a 16-foot hole and is east of Bloomington, where a large leasehold is owned by the two companies that drilled the well. Same companies are drilling another test on the State Life Insurance Co.'s land 10 miles east of Bloomington on another large block of leases and are also drilling on the F. and L. Deckard farm, near the Lawrence County line in Polk Township, Monroe County, another wildcat.

Several wells over various areas of Indiana are nearing the pay sands. In the Kankakee Valley there is talk of drilling a series of 10 wells in hope of

(Continued on Page 118)

For fire protection alone *they are a profitable investment*





Above: Group of Gulf Refining Company tanks at Sweetwater, Texas. They are all equipped with Wiggins Floating Roofs. Right: 80,000-barrel Humble Pipe Line Co. tank at Ingleside, Texas, originally equipped with a cone roof. It was converted into a Wiggins Breather Roof.

WIGGINS Roofs for oil tanks have proved to be profitable investments from the fire prevention standpoint alone — disregarding the fact that they pay for themselves in a few months through evaporation savings, and that they reduce sour oil corrosion.

Fire tests by prominent oil companies have demonstrated their effectiveness. In actual service, no tank equipped with a Wiggins Roof has been destroyed by fire, either from lightning or exposure.

Wiggins Roofs prevent fires by the elimination of inflammable mixtures of air and vapor, either inside or outside the tank. The Floating Roof (for working tanks) rides on the oil, blanketing practically the entire surface. The seal is so constructed that a flash cannot reach the oil. On standing storage, the Breather Roof flexes up and down with temperature changes, so that no vapor is vented out nor air drawn in. This is particularly important when a thunder shower suddenly cools the tank on a hot day. An ordinary gastight tank sucks in air and creates a highly combustible mixture just when lightning is most prevalent . . . the Wiggins Breather Roof does not.

Address our nearest office for estimates on equipping your present tanks with Wiggins Roofs. Ordinarily the old cover is removed and the new roof completely installed. Low pitch steel roofs in good condition, however, can be converted into Breather Roofs without removing the old one. We have just issued a new booklet giving a complete description of the Wiggins Breather Roof. We will gladly furnish a copy on request.

WIGGINS ROOFS *Stop* FIRE LOSSES

CHICAGO BRIDGE & IRON WORKS

Dallas	3341 Magnolia Bldg.	Chicago	2128 Old Colony Bldg.	Boston	1517 Consolidated Gas Bldg.
New York	3147 Hudson Terminal Bldg.	Detroit	1514 Lafayette Bldg.	San Francisco	1054 Rialto Bldg.
Cleveland	2204 Union Trust Bldg.	Philadelphia	1615 Jefferson Bldg.	Birmingham	1536 50th Street, North

EQUIPMENT AND SUPPLIES

SIVYER COMPANY ELECTS OFFICERS FOR THE YEAR

At the stockholders' meeting of the Sivyer Steel Casting Co., Milwaukee, Wis., recently consolidated with the Nugent Steel Castings Co., of Chicago, the

C. R. Messinger

following officers were elected: C. R. Messinger, chairman of the board; L. S. Peregoy, president; M. A. Fladoes, vice president in charge of sales; George L. Pollock, secretary; and C. A. McDonald, treasurer. The directors are C. R. Messinger, W. C. Frye, Walter Kasten, Donald Fraser, C. F. Messinger, E. L. Wood, L. S. Peregoy, C. A. MacDonald, M. A. Fladoes, and C. E. Stone.

NEW PLANT IN OKLAHOMA CITY

Announcement of plans for the erection of a new factory in Oklahoma City has been made by Black, Sivalls & Bryson, Inc., Bartlesville, Okla., manufacturers of welded vessels and equipment, through its subsidiary, the American Tank Co., of Oklahoma City. This factory will be erected on a site containing about 10 acres, at Westwood Boulevard and Popular Street.

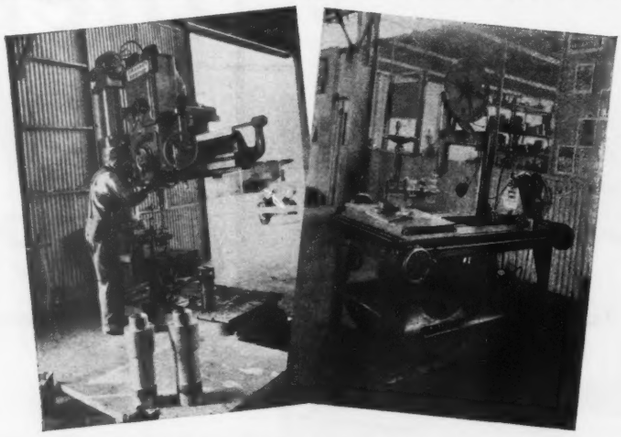
The output of this plant will consist of many products now manufactured at the old plant of the American Tank Co., including the American oil and gas separator, welded oil field tanks, welded bulk storage and filling station tanks, welded refinery equipment, welded piping, pressure drums, and other welded equipment.

The main building will be 140 feet wide and 260 feet long, of half moniter type construction with the main section 45 feet to the top of the roof. The side walls will be galvanized metal with very large window areas. The entire floor will be a 6-inch concrete slab. Only three rows of columns will support the structure and crane-way. The entire area will be served by overhead traveling cranes and by switch brakes running inside and across the entire width.

This building will be made of welded members. Not a rivet of any kind will be used in it. This is the first time a project of this kind has been attempted in the Mid-Continent area. The structure has been so designed that it will support the heavy loads of the 5 and 10-ton cranes.

The Smith Separator Co. has opened new offices in the Petroleum Building, Fort Worth, Tex., with J. M. Sides in charge.

PRECISION MACHINERY USED FOR PRECISION TOOLS



Left, Cincinnati Bickford radial drill press. Right, Marvel metal band saw.

The plant of the H. C. Smith Manufacturing Co., Los Nietos, Calif., is said to be one of the most modernly equipped plants of its kind and its engineering department is constantly on the alert to devise or adopt new equipment for improving and perfecting the company's line of precision drilling, coring and underreaming tools. The latest product of the company, type "F" rock core bit for hard formations, is the result of research work on the part of staff engineers and, in addition to the regular plant equipment, necessitated the installation of special machinery and equipment to facilitate its manufacture. Both of the machines shown in the accompanying illustrations are used in machining the type "F" rock core bit. The Marvel metal band saw is capable of fast and smooth finish, comparable to semi-finished work of a milling machine. It weighs 2,000 pounds complete and its capacity is 18 by 18 inches. It is possible to top 45 degrees either to the right or left and saw any set-up work. The Cincinnati Bickford radial drill press is the latest type machine with precision and accuracy of work and wholly centralized control. This machine has 11-inch column and 4-foot arms.

SIX-WHEELER TANK TRUCK

With the advent of the powerful new "Blue Streak" six-cylinder motor perfected by the Autocar Co., Ardmore, Pa., this company has brought out in its regular line of trucks a big six-wheeler powered by the new motor. The first of these six-wheelers turned out in regular production was a tank truck sold to the Standard Oil Co. of Pennsylvania. It is a 198-inch wheelbase, with five-compartment tank of 2,622-gallon capacity, has 40 by 8 pneumatic tires all around, drives through all four rear wheels, and is equipped with Westinghouse air brakes. The long wheelbase of this six-wheeler, with its front wheel tread of 71¾ inches and rear spread of 75 inches, gives a load distribution which keeps within highway statute limitations on maximum load. One of the advantages of this unit is its ease of handling, frequently being called upon to back into narrow alleys in making deliveries.

LORRAINE CORP. HAS RECORD OF STEADY PROGRESS

In the development of gas traps and oil separators, the Lorraine Corp., of Los Angeles, Calif., is among the pioneers. This company has shown a steady record of progress during the 13 years of its existence and has a world-wide reputation. The company manufactures and distributes a large line of equipment for oil field work, and operates a large, specially designed and modernly equipped plant, centrally located with reference to all southern California oil fields, and with advantageous shipping connections, through the railroads and the Los Angeles Harbor, to all parts of the world.

A recent shipment of 74 low-pressure and 10 high-pressure Lorraine automatic gas and oil separators to a large producer in the South American fields is an example of the demand for Lorraine separators.

NEW PUMPING UNIT IS ANNOUNCED BY LUFKIN

The Lufkin Foundry & Machine Co., Lufkin, Tex., which six years ago pioneered the application of worm gearing to oil well pumping rigs, announces the Lufkin Sykes Herringbone pumping unit, which embodies a new type of helical gear having herringbone teeth.

These gears are actually worm gears, the teeth of the pinions being in all respects identical with worm threads of a relatively long lead. The essential difference between the new herringbone gear and the worm gear as employed heretofore is that the shafts of both wheel and pinion are parallel to each other instead of at right angles, as in the worm gear.

A further difference, which is possible due to the shafts being parallel, is that the pinion, or worm, can be arranged with right and lefthand threads, or teeth. This has the advantage of eliminating end thrust and therefore no thrust bearing is needed and, consequently, expense is saved. In addition, there are fewer parts with reduced likelihood of trouble and a tendency toward decreased maintenance expense.

An additional advantage is that the sliding action of the teeth in motion is less than in the worm gear, while at the same time, due to the relatively large helix angle which can be used, the smoothness of operation and the property of efficient lubrication are maintained.

A detailed description of the new unit, with illustrations, specifications and blueprint setting plans showing various hookups, is contained in the March-April number of the company's house organ, the Lufkin Line.

AEROPIT NEW FUELING DEVICE

The Aeropit, made by the Gilbert & Barker Manufacturing Co., Springfield, Mass., is a new fueling device for airports designed to afford convenient fueling service with freedom from fire and ground hazards. In addition, it provides a flexible system that can be adapted to any size or type of field. On new fields, one pit may be installed, and as activities increase other pits can be added. Each Aeropit has two compartments—the control compartment, containing the meter, filter, motor switch and shut-off valve, and the hose compartment, with a horizontal hose reel, on which is coiled 50 feet of hose. The hose can be taken out either side of the pit, giving a fueling range of approximately 100 feet. The horizontal hose reel, or turntable, revolves on a specially designed, ball-bearing center mounting. When a plane is to be fueled, the mechanic simply picks up the nozzle and walks out to the ship, pulling the hose after him. When the supply of gasoline has been served, the hose is rewound by an easy operating ratchet arrangement. In 60 seconds the whole 50 feet of hose can be recoiled on the reel. Guide rollers are placed at the edges of the pit to prevent chafing of the hose as it passes in and out of the pit.

ANOTHER WELDING BLOWPIPE

Oxweld Acetylene Co., New York, has announced another new blowpipe, the Type W-17, which employs the same low pressure injector principles used in other Oxweld blowpipes. It is somewhat similar in design to the Type W-15 aircraft welding blowpipe which was introduced about a year ago. The Type W-17, however, is a full-sized blowpipe, large enough for any welding job and so carefully designed and constructed that it may be used for the finest of welding craftsmanship.

The
PHOTOGRAPH
is
UNRETOUCHED

GROUND WEARING SURFACES CONTRIBUTE TO THE FINE FIT AND LONG WEAR OF *Axelson* PUMP PARTS

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

Axelson Manufacturing Co., Ltd.
P. O. Box 337 Los Angeles
Tulsa St. Louis
New York City, 30 Church St.

Mid-Continent and Eastern Distributors
Frick-Reid Supply Corporation

Bootlegging in Patents

There is bootlegging in patents just as there is in gasoline or liquor It is important to watch your step when dealing with any bootlegger

(1) The patent bootlegger appropriates what isn't his and sells it for his profit regardless of consequences to the buyer

(2) The gasoline bootlegger usually buys his goods with

scant regard for quality or source, and sells without responsibility

(3) Make your own definition of a liquor bootlegger if you know one

Opinions may differ as to (2) and (3), but there should be no difference of opinion as to the patent bootlegger

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

EQUIPMENT AND SUPPLIES

DRANE-HUMPHREY MAKES DEE DONNELL PRESIDENT

Following the resignation of S. H. Humphrey as head of the Drane-Humphrey Co., Fort Worth, Tex., manufacturer of oil tanks, wire-line lubricators

Dee H. Donnell

and protective coatings, Dee H. Donnell, vice president, has been chosen president. Mr. Humphrey, who was compelled by ill health to relinquish active work in the company, will retain his interest in it and remain a member of the board of directors.

C. O. Gibson is now vice president and general field manager of Drane-Humphrey, and M. N. Taylor is secretary and treasurer, in charge of the San Angelo, Tex., office.

TRADE LITERATURE RECEIVED

A revised and enlarged edition of "Celite for Concerete," published by Johns-Manville, New York, is being distributed. It contains new material and photographs and supersedes the former publication.

"Pipe for Permanence" is the title of an interesting booklet being mailed by the Republic Iron & Steel Co., Youngstown, Ohio, and presenting the advantages of Toncan copper molybdenum iron pipe.

Bulletins describing the Wilco duplex tank control and the Wilco duplex relief valve have been prepared by the Wilkinson Controller Co., Los Angeles, Calif.

The Petreco process for the electrical dehydration of crude oil emulsions is described in an attractive bulletin issued by the Petroleum Rectifying Co. of California, Los Angeles.

In an interesting article entitled "Now Wouldn't That Jar You?" by L. A. Wilke, the March number of the Rig and Reel, published by the Parkersburg Rig & Reel Co., tells how 2,000 quarts of nitroglycerin was used in shooting a Texas well.

The Kewanee Type C boiler is the subject of a new Catalog issued by the Kewanee Boiler Corp., Kewanee, Ill.

An attractive 8-page circular describes the advantages of the United crawler tractor, made by the Trackson Co., Milwaukee, Wis., for oil field work.

MARTIN-DECKER CORP. MOVES INTO ITS NEW PLANT

E. L. Decker
Vice President

W. R. Martin
President

The new home of the Martin-Decker Corp., at 3433-3443 Cherry Avenue, Long Beach, Calif., includes a Spanish stucco office building and a factory building of standard steel construction. The former contains five offices in addition to the general office, reception room and display room. Equipment in the factory building, used for the manufacture of weight-recording, measurement and control devices, is made up of the latest type direct motor driven machinery.

On moving into its new headquarters the company on the evening of February 1 held an opening party. The offices were decorated with flowers, flags and streamers hung in the shop and the guests danced on the concrete floor of the shop.

ALCO DEVICE MAINTAINS CORRECT WEIGHT ON BIT

The Alco automatic weight control, manufactured by the Alco Oil Tool Co., Compton, Calif., was designed primarily to allow feeding out the drill pipe foot by foot, yet maintaining correct and uniform weight on the bit. This tool is said to have been found highly efficient in drilling straight hole, cases being reported where the deviation in 3,500 feet amounted to only 2 per cent.

The tool has only two moving parts, the mandrel and the body. The body is machined inside to allow entrance of the square mandrel, this shape proving an efficient and simple means of transmitting the torque of the rotary motion from the body to the mandrel. About 20 inches of up and down travel is permitted the mandrel inside body.

The Alco control is placed in the lower end of the drilling string and so spaced above the bit that the weight of the drill pipe below the control, plus the weight of the control mandrel, is the weight desired on the bit. Thus when the bit is on bottom, the weight above the control, including that of the control body, is supported entirely by the drilling mechanism, leaving only the weight of the mandrel and the drill pipe below the control bearing on the bit.

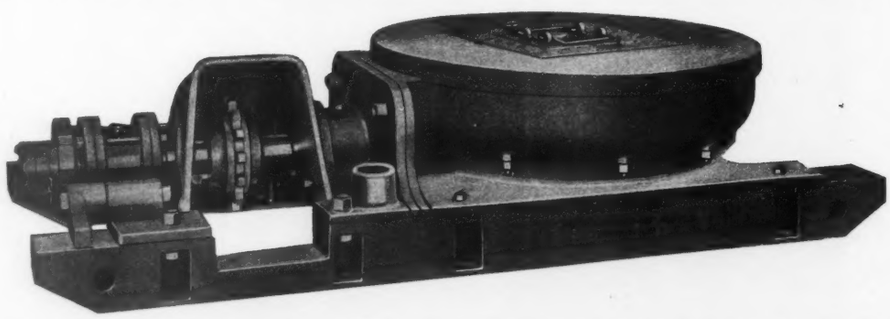
In operation, if the drill string is lowered too fast, permitting the body of the control to descend the full length of its travel, and allowing the weight of the drilling string above the control to bear on the bit, a valve in the upper part of the control checks the action of the mud pump. Then before full circulation can be restored, the drill pipe must be raised a little, which of course relieves the bit of the excessive weight.

BUSINESS NOTES

An interesting program has been prepared for the March meeting of the Steel Founders' Society of America, Inc., in the Statler Hotel, St. Louis, Mo., Thursday, March 27.

G. W. Moore, representing Byron Jackson Co., is on a trip through the Oklahoma, Kansas, Wyoming and Montana fields on his way into Canada where he will devote the summer representing this company in the Turner Valley and other Canadian fields.

THIS FULLY ENCLOSED "GUMBO BUSTER" ROTARY RUNS IN A BATH OF OIL



A rotary of new design which is fully enclosed and runs in a bath of oil is being produced by the American Well & Prospecting Co., of Corsicana, Tex., manufacturer of the Gumbo Buster line of oil field equipment. This rotary is being distributed through the Republic Supply Co. whose general offices are in Houston, Tex.

The new 26-inch Gumbo Buster rotary is all steel, including skids which are accurately machined on top. The pinion shaft which is 4¾ inches in diameter is forged, cut and hardened. The shaft runs in Hyatt roller bearings in each of the two boxes. Gear teeth are forged, cut, hardened and shrunk on the master wheel.

Both pinion bearing boxes are in one casting and are not adjustable. This is to insure that bearings will be in line at all times and that teeth on pinion will engage properly teeth on ring gear. The hold-down ring is inside and constantly lubricated. There is a convenient locking device on the end of the pinion shaft.

The oil bath assures constant lubrication of gears and cones, prevents entrance of foreign matter to these parts, eliminates "whipping" in rough drilling and promises reliable and economical service.

H. C. SMITH

Quality TOOLS

Lead the Field in Efficiency, Safety, Speed and Economy

There is no uncertainty about results when H. C. Smith Quality Tools are used in your drilling and coring operations. You know in advance that these tools will stand up under the severest kind of service, even in the very deepest wells. They meet every condition—*perfectly!*

The Famous H. C. Smith Type "C" Coring Outfit. Takes perfect cores in any formation that a fishtail or disc bit will penetrate. Cutter heads can be changed quickly and easily. Serrated feature of bit blades provides easier penetration of all hard and soft formations.

H. C. Smith Type "G" Drilling Bit. Embodies the newest features in drilling tools and is a fast digger in any formation. Eliminates reaming down to get new bit on bottom. Twelve side reamer bit bodies take care of all sizes between 5½" and 27". Write for Catalog No. 31.

The New Type "F" H. C. Smith Rock Core Bit. Operates on a new and different principle and efficiently cores the hardest formations. Has larger cutters, insuring better roller action and larger cutting surface. Side reamers insure full gauge hole and steady bit in the hole. Interchangeable with all other H. C. Smith cutter heads.

Upon request, we will gladly send you complete information and performance records of H. C. Smith Quality Tools.

H. C. SMITH
MANUFACTURING CO., *Inc.*
Los Nietos, California

Branch Offices and Warehouses:
Bakersfield, Calif. Kettleman Hills, Calif.
Ventura, Calif. Taft, Calif.
Oklahoma City, Okla.

Cable Address: "Smithco, Whittier"

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

DETERMINING VOLUME OF GAS

Will you tell me please what is meant by the saturation method of ascertaining the volume of gas in a sand? How do you proceed by this method?—L. U. L.

Your question is somewhat involved if a strictly technical answer is expected, but it is assumed that you are more interested in the practical side of the problem than in going deeply into factors more or less unknown but theoretically bearing on this subject.

In a practical way it may be stated that saturation takes into account the porosity and thickness of the producing sand, the total productive area and the initial shut-in pressure. The pore space in the sand is determined by the porosity, productive area and thickness of the sand body, and the original volume of gas that the sand might have contained may be calculated by the following equation:

$$V = \text{productive area (in sq. ft.)} \times \text{thickness of sand (in feet)} \times \text{porosity (in per cent)} \times \frac{(P_1 + \text{atmospheric pressure})}{(\text{atmospheric pressure})}$$

Where V = original amount of gas contained in sand, calculated in atmospheric pressure.

P_1 = original closed-in pressure (generally termed original rock pressure).

Assume that a unit of sand is 1 foot thick and contains 22 per cent voids, or pore space per cubic foot, and covers 1 acre.

An acre-foot or 43,560 cubic feet of sand under the above conditions would contain 43,560 × 0.22 or 9,583 cubic feet of pore space.

Gas volumes are measured at an average mean atmospheric pressure of 14.4 pounds per square inch and at a pressure of 4 ounces (0.25 pound) above the mean atmospheric pressure. The pressure approximately corresponds to 14.7 pounds at 60° F., the pressure at mean sea level.

Theoretically, the temperature at depth should be taken into account, but in approximate calculations, like this one, such refinements are of little value.

The number of expansions for 100 pounds "original rock pressure" would be:

$$\frac{100 + 14.7}{14.7} = 7.8 \text{ expansions}$$

The total number per acre foot will be the volume of gas multiplied by the expansions (or 9,583 × 7.8), which equals 74,747 cubic feet of gas contained in an acre-foot of 22 per cent porosity sand at 100 pounds original rock pressure.

CATCHING 'EM LIKE BASEBALL

An argument has been raging here over a story told by two members of the staff who heard it in the territory around Coffeyville, Kans., and Bartlesville, Okla. In its essentials it is this: A shot-firer who was lowering his last shell of nitroglycerin into a hole heard or felt the already placed shot explode and placed himself over the hole in such fashion that he caught the shell he had been lowering as it was ejected from the well. He of course survived to tell the tale. We would appreciate information concerning such an occurrence and its details if there is any record.—D. Q.

No information is at hand concerning the particular incident to which you refer, but well authenticated stories are told of shooters having caught shells of nitroglycerin as they emerged from the well ahead of a flow of gas or oil. There seems to be no doubt about this feat having been performed several times, and all things considered it appears to be about the only thing a shooter can do to avert disaster under the circumstances.

It is suggested that you write direct to Walter H. Jeffrey, Second National Bank Building, Toledo, Ohio, who has been in the shooting business for many years, and is also the author of the book "Deep Well Drilling." He probably can give you information on this point.

It also is suggested that you write to C. O. Rison, Care of Indian Territory Illuminating Oil Co., Bartlesville, Okla., for a copy of his paper on "Manufacture of Nitroglycerin and Use of High Explosives in Oil and Gas Wells." This paper was presented before the A.I.M.E. meeting held in New York in February, 1929, and it gives a broad view of this whole subject. Mr. Rison states that a loaded shell occasionally comes up with a more or less weak head flow and many times such a shell has been taken out of the flow at the control head without much difficulty.

However, Mr. Rison also states: "A loaded shell ejected from the hole at high speed by high-pressure gas or a violent head flow of gas and oil invariably results in a destructive explosion. Despite the reports to the contrary regarding the ease with which ejected shells can be caught at the surface, the author has not attempted to catch one and knows of no one who has."

It therefore would seem from this that distinctions must be made and that the velocity of discharge be the important factor in determining whether the shooter could or could not catch a shell leaving the hole.

There is a Bureau of Mines publication by R. E. Collom, entitled "Notes on Spontaneous Explosions of Nitroglycerin in Oil and Gas Wells, Stephens, Palo Pinto and Young Counties, Texas," that you might refer to at the bureau's library in Washington.

FINDS SHALLOW GAS STRATUM

In drilling a well which I expect to complete at about 2,400 feet I have encountered a strong flow of gas at 1,350 feet. I am in doubt as to what it is best for me to do, for the gas is flowing at the rate of 500,000 feet a day, which would make it profitable. I want to go on down for oil, however, and I do not know whether it would pay me best to case off this gas and drill ahead and then drill another well close by for gas or to finish the present well as a gas well. I would like to know if there is any way that I can get the gas from the shallow sand and oil from the deeper sand, too.—A. G. N.

A flow of gas at the rate of 500,000 feet a day might not be enough to justify drilling a new well to produce it, if your first well is drilled on to the oil sand, but if you have this gas in the big hole it should be possible so to set your casing that you can produce the gas from this sand between two strings of casing and take it away from the well through connections in the casinghead.

This would require that the hole you now have be carried on through the gas sand after the casing has been set on the casing point above the sand, and after this work had been done it would be possible to drill a smaller hole on down to the oil sand and set another string of casing to it. In that way the gas could escape between these two strings of casing while the oil was produced inside the long string of casing or through tubing that is run inside it.

The economic value of this procedure will determine whether the gas will produce enough revenue to pay for the extra casing and work involved and you alone are the best judge of that condition, for you know the value of this gas at the well mouth and the use to which it could be put after being brought to that point.

WHY WAS IT CALLED THAT?

RIGGING UP

Before the work of drilling can be started, but after the derrick has been built, a boiler, engine, tools and machinery must be installed and a supply of fuel and water must be established. This operation, which in substance is that of getting the rig ready, is conveniently described by the drillers' term, "rigging up."

COMPANIES HAVING HOSPITALS

Will you please give me some addresses of oil companies in South America that have company hospitals there, or tell me where I may get this information?—B. J. B.

There are about 70 oil companies operating in Colombia and Venezuela. No information is at hand to indicate which of these operate field hospitals or first-aid stations. It is probable that you can get some definite information in this connection by addressing the following companies and giving the reason for your inquiry: Tropical Oil Co., Farmers Deposit National Bank Building, Pittsburgh, Pa.; Lago Petroleum Co., 120 Broadway, New York, N. Y.; Standard Oil Co. of Venezuela, 26 Broadway, New York, N. Y.; Venezuela Gulf Oil Corp., Frick Annex Building, Pittsburgh, Pa.; Venezuela Oil Concessions, Ltd., St. Helen's Court, Great St. Helen's, London, E. C. 3, England.

MEASURING CURRENT DISCHARGE

If there is some way of ascertaining the damage, or rather the rate of damage, being done by corrosion caused by electrolysis on a pipe line I would be glad to know what it is or if you can refer me to any literature on the subject I wish you would do so. We know that at a good many points along a pipe line the corrosion is due to electrolysis. We would know better what steps to take if we knew just how fast this corrosion is going on.—S. E. F.

This is a rather involved process but has been quite fully covered in several reports by Drs. K. H. Logan and Gordon N. Scott of the United States Bureau of Standards and there is one on "Pipe Line Currents" on Page 116 of the A. P. I. Development and Production Engineering Bulletin No. 204, issued January, 1930, covering the Chicago meeting last December. Information may be obtained also by addressing the United States Bureau of Standards at Washington, D. C., and requesting copies of its bulletins and reports on the subject of soils and currents.

In his book, "Corrosion Causes and Prevention," Frank N. Speller, director of the metallurgical department of the National Tube Co., says on this subject:

"The only accurate method of determining the rate of corrosion at any point on a pipe due to electrolysis is to measure the intensity of the current to earth. If an accurate measurement of this current from the pipe at any point is made, it will be nearer to a true indication of electrolysis conditions than any other measurement.

"Electrolysis engineers frequently take potential difference measurements between pipes and adjoining earth as a basis for determining the current discharge from the pipe. Such determinations, however, may be largely in error. . . . The Bureau of Standards has developed an instrument called the earth-current meter, which measures the average current density of discharge from the surface of the pipe over any desired small area, usually from one-half to one square foot. The principle upon which this instrument is based is that of placing two nonpolarizable electrodes, spaced a few inches apart, in contact with the soil on a line radial to the pipe. These electrodes are connected with a suitable instrument for measuring the potential in the earth between these two points of contact. A second pair of electrodes is combined with these in such a way as to permit the measurement of resistivity of the earth in the region between the two potential electrodes. It is obvious that if the resistivity of the earth and the potential gradient in the earth are thus measured, the intensity of current in the immediate vicinity can be readily calculated."

DETECTING HELIUM GAS

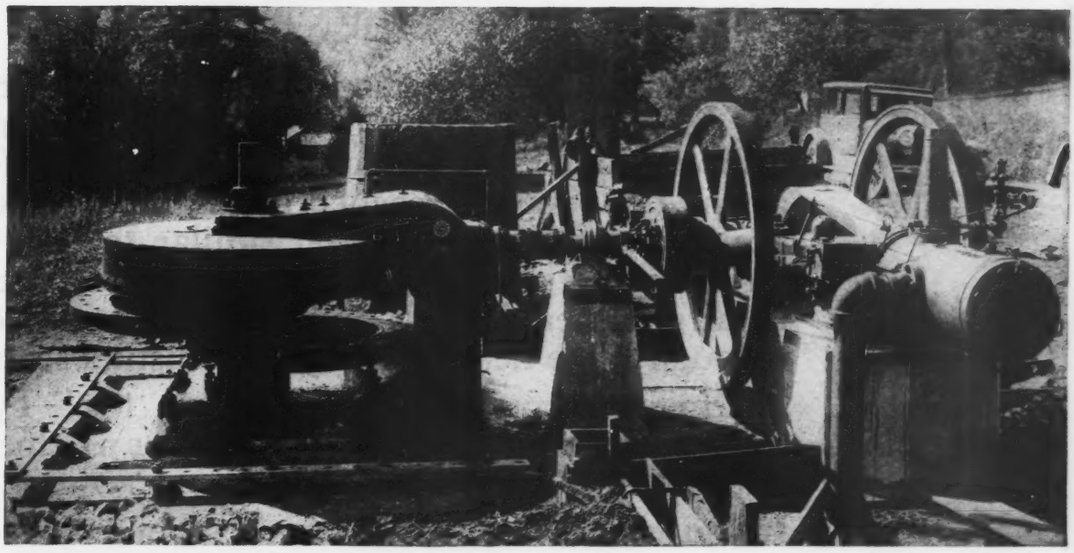
Is there any way of detecting helium gas without a laboratory, that is in the field?—L. M.

Production of helium from natural gas is based on the fact that if everything else in the gas is liquefied, then the helium can be pumped off and separated. No paraphernalia for this process in the field has been devised. To determine the existence or nonexistence of helium in natural gas it is necessary to subject the gas to the same process of liquefaction that is employed in the commercial production of helium. That is to say, the propane, butane, ethane, methane and nitrogen in the gas must be liquefied as the first step in the test. The residue, if there be any, is helium.

. . . in the B and S Geared Power

Year after year, Bovaird & Seyfang geared powers perform their appointed tasks, consistently and well . . . a glowing tribute to the perfect coordination of B & S design and manufacture.

No small measure of credit for their unusually satisfactory service is due to the application of Hyatt Roller Bearings at certain strategic points in the equipment.



Geared power built by Bovaird & Seyfang Mfg. Co., Bradford, Pa. . . . totally Hyatt-protected. Pillow block and cut-off clutch are also Hyatt-equipped.

Hyatts promote a smoother, more effortless, flow of power . . . in addition to reducing maintenance costs by eliminating the need for bearing adjustments and repairs.

In pumping powers . . . as in hoists, draw works, rotaries, reduction gear units and other important equipment . . . Hyatts provide lasting satisfaction and permanent operating economy.

HYATT ROLLER BEARING COMPANY
Newark Detroit Chicago Pittsburgh Oakland

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

COOPER-BESSEMER

YOU won't have exhaust valve trouble with these Cooper-Bessemer 4-cycles! Valves are made of a special material that cannot burn or warp (or rust) at any temperature reached in gas engine operation. Seats are made of a material similar to that used in resisting the extremely high exhaust temperatures in airplane engines. Cooling water passes directly through these heat resisting, non-rusting seats.

Neither will you have engine room fog! Type-80's new enclosed breather compartment does away with that.

If you want to know the many other cost-reducing, time-saving, load-mastering features built into this 85-190 B. H. P. unit, write for the new Bulletin—or let one of our representatives explain!

The Cooper-Bessemer Corporation

Formerly The C. & G. Cooper Company and The Bessemer Gas Engine Company

Mount Vernon, Ohio Grove City, Pa.

Branch offices in all principal oil and gas fields

COOPER CB CORP BESSEMER

TYPE-80

Marc

HA

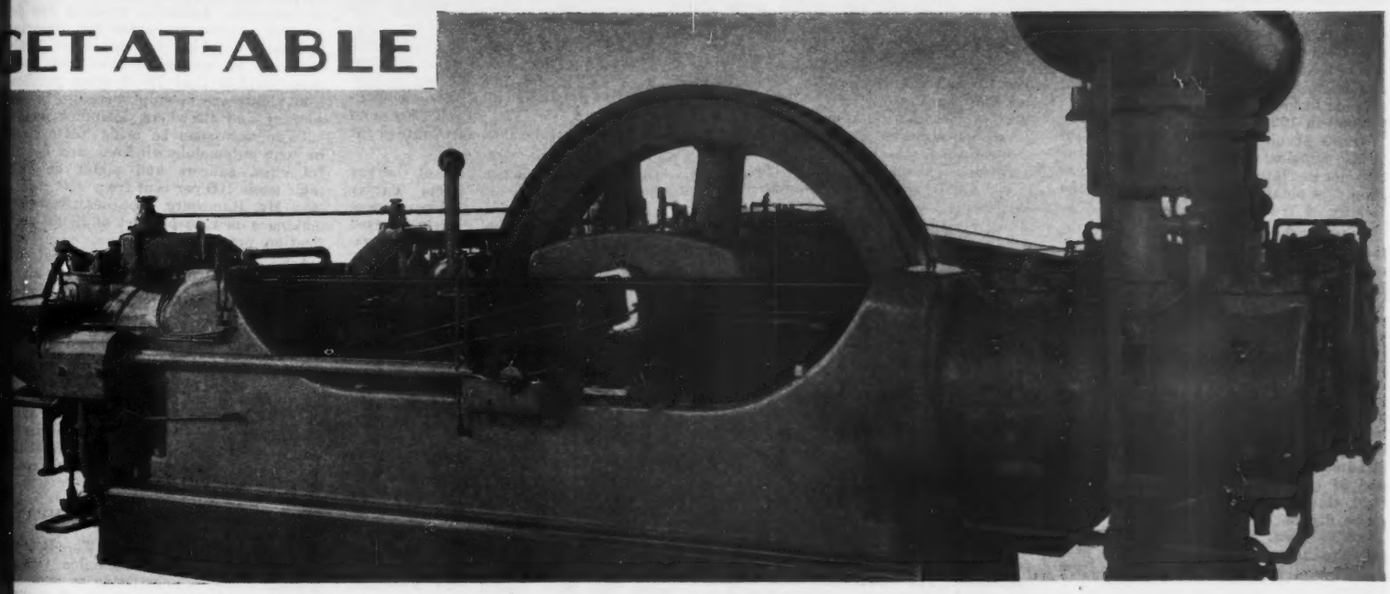
GE

DE

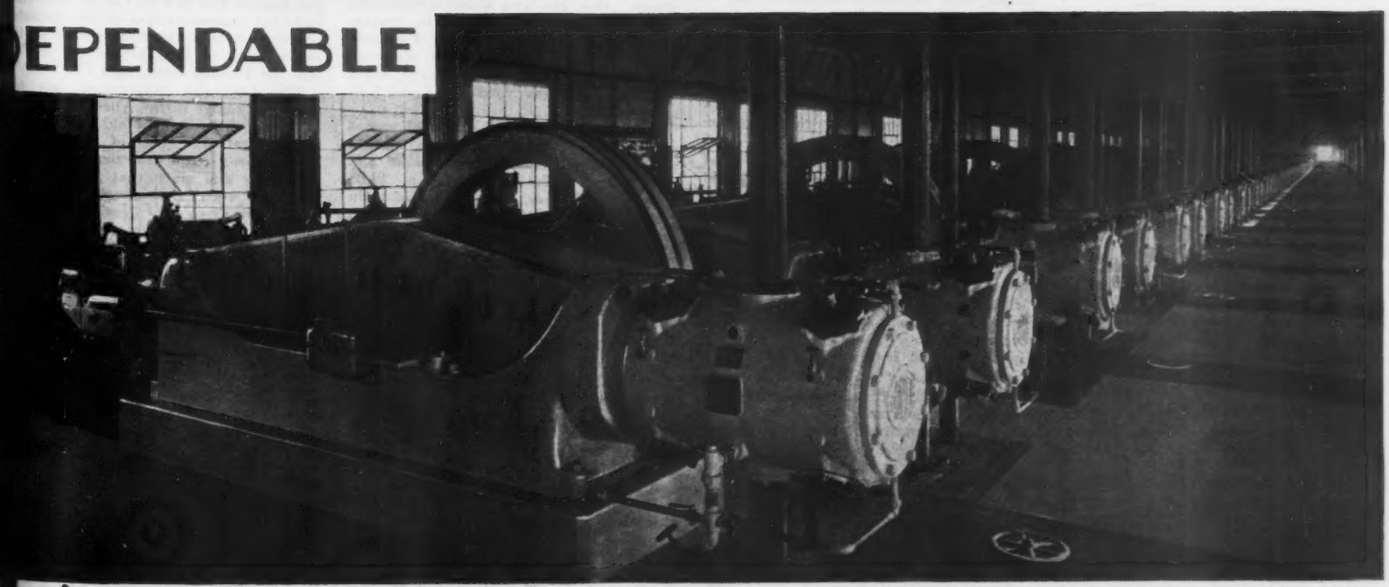
DU

HAULABLE

GET-AT-ABLE



DEPENDABLE



OU'RE ALWAYS SAFE IN CHOOSING A COOPER-BESSEMER

Natural Gas Developments

Columbia G. & E. Co. Buying Western N. Y. Distributing Rights

Application has been made to the New York Public Service Commission by the Columbia Gas & Electric Co. for consent to consummate the purchase from George Reynolds of Elmira, N. Y., of all of the common stock of the Consumers Natural Gas Co., of Watkins Glen, N. Y. It is expected also that the application will be approved because of the benefits to the communities affected.

The Consumers Natural Gas Co. was organized in 1904 by Reynolds who has been president of the company ever since. The sale was made by exchange of 4,000 shares of stock of the Consumers Natural Gas for preferred stock of the Columbia Gas & Electric to be issued to Reynolds, who is the only stockholder.

The Watkins company owns gas franchises in Millport, Montour Falls, Watkins Glen and Dundee. It has been supplying natural gas in Watkins since 1904 and in Montour Falls since 1912. Gross revenue from sale of gas has grown from $38,000 in 1920 to $63,000 in 1929. The Watkins Municipal Electric Light plant is also supplied with gas for fuel by the Consumers Natural Gas Co. Natural gas supply is obtained from 20 wells in the vicinity of Watkins.

Recently the Columbia company bought the Binghamton Gas Co. and has acquired franchises in 17 points around Binghamton and other parts of New York State. In addition to the Binghamton company, Columbia owns the pipe line extending from West Virginia through Pittsburgh to Olean and from Olean to Grafield, N. J.

A company with which Columbia is affiliated recently struck a very large gas well near Dundee. The well was drilled in by the Belmont company of Bradford, Pa., and is said to have been one of the biggest ever struck in that field. Gas from the well, and other wells to be drilled, is to be piped to Dundee, Watkins Glen, Montour Falls and Millport to the Columbia pipe line near Horseheads, N. Y., a short distance from Elmira.

GAS FOR ELECTRIC POWER

SAN FRANCISCO, Calif., Mar. 22.—The State railroad commission announces arrangements have been completed whereby the Southern California Edison Co., the Los Angeles Gas & Electric Corp. and other utilities in southern California will use surplus natural gas as fuel for the generation of electric power instead of blowing the gas into the air to be wasted.

"The utilization of this surplus gas," the commission said, "will result in a substantial economic saving, both in the conservation of the natural gas itself and also in the cost of operation of the gas and electric utilities involved. The consummation of this arrangement is in line with the policy of conservation now being so aggressively sponsored by State, Federal and industrial agencies."

Southern California Edison will use surplus gas it now purchases under a year-around contract with producers in the Ventura and Long Beach Fields in its large generating plant at Long Beach, the commission said.

HAMILTON GAS BUYS

The Hamilton Gas Co. has purchased the properties in West Virginia of the Tiduca Gas Co. and entered into a gas purchase contract covering the property and wells of the Starr Producing Co.

METHODS OF UTILIZING WASTE GAS SUGGESTED

CHATHAM, Ontario, Mar. 22.—In an address before the Chemical Club of the University of Alberta at Edmonton recently, Dr. R. C. Wallace, president of the university, dealt in detail with possible solutions of the waste gas problem in the Turner Valley. He estimated the daily wastage at 180,000,000 feet, and added that all the gas produced could not be used. A policy of conservation and restriction might eliminate the present waste. By applying back pressure of from 1,000 to 1,500 pounds, it might be possible to regulate the flow so that only 40 per cent of the gas would escape. With such a method there would be greater crude naphtha recovery per 1,000 feet of gas, and while the daily crude naphtha output would not be so large, the flow would last longer and be of better quality.

Suggesting various methods of utilization of waste gas, Doctor Wallace pointed out that many of the projects demanded large capital and the assurance of a long period of operation. Storage of gas in exhausted sand was possible, where there were dry exhausted sands. The Bow Island sands are the only storage possibilities in Alberta and there water has already intruded into the sands. At present a maximum of 70,000,000 feet a day of gas from Turner Valley is used for domestic and industrial purposes. There is a possibility of piping gas to Swift Current, Moose Jaw, Regina, Saskatoon and even to Winnipeg. But a pipe line to Winnipeg is a big project and not possible without some assurance of the duration of the field. The cost would be approximately $50,000,000, 10 years being too short a time to make it worth while, and 15 years merely allowing possibilities. At present there is an application to the government for a permit to export gas to Butte and Great Falls. This would use 50,000,000 feet a day.

Chemical utilization was a possibility and products that can be chemically developed from the waste gas attract other industries. The commission that has inquired into the matter estimated that in five years there can be built up a chemical utilization of 90,000,000 feet a day, representing 50,000,000 feet in the production of benzol which leaves a by-product gas that can be used for domestic purposes, 30,000,000 feet in carbon black and 10,000,000 feet in hydrogen production.

Benzol manufacture would use a great amount of gas and the product would soon have a greater market in the west. It has a high detonating value and anti-knock properties for automobiles. The carbon black industry if established would consume at least 30,000,000 feet a day. It is a destructive method of chemical utilization. Eastern Canada at present draws its carbon black from Louisiana and other states. The supply could readily be obtained from the Turner Valley.

Manufacture of ethylene glycol is another possibility. It is a product used for celluloid lacquers and low-freezing dynamites and explosives. Hydrogen, which can be obtained cheaply from natural gas, is used extensively in the manufacture of ammonia for fertilizers as well as in the process of hydrogenation.

Doctor Wallace emphasized the importance of conservation of the gas by restricting the flow, and the further fact that long-distance piping depended on the long duration of the field. Chemical utilization, he thought, was the most feasible and serviceable suggestion and a field of enormous interest for the research worker and the industrial chemist.

TEST GAS STORAGE

CHATHAM, Ontario, Mar. 22.—Announcement has been made by C. J. Yorath, president and general manager of the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary, that preparations are being made for intensive tests of the possibility of storing the surplus gas from Turner Valley in the exhausted sands of the Bow Island Field. Experts in such storage operations have been working on the scheme for some time, and actual experiments will be made in the summer of 1930.

CANADIAN WESTERN GAS ISSUES ANNUAL REPORT

CHATHAM, Ontario, Mar. 22.—The annual report of the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary, shows gas sales amounting to 6,613,579,000 feet at an average rate of 29.58 cents per 1,000. Revenue aggregated $2,075,321, of which $1,956,022 was from gas sales. Domestic consumers purchased 4,085,744,000 feet valued at $1,382,420; commercial consumers 1,140,435,000 feet valued at $334,938; and industries 1,387,382,000 feet valued at $238,633.

In 1929, some 95 per cent of the gas consumed was produced from Turner Valley wells. A still larger percentage of Turner Valley gas will likely be used in 1930. The company has on its system four developed fields, Turner Valley, Foremost, Bow Island and Barnwell. The Bow Island Field was held in reserve in 1929 and only a small amount taken from Foremost.

Referring to the Turner Valley Field, the report states:

"The developed daily open flow of gas in the field has increased tremendously; at the moment it is in excess of 225,000,000 feet. Owing to conditions peculiar to this field, it is difficult to calculate the actual reserves, but estimates by reliable geologists agree in a possible reserve of 500,000,000,000 feet within the Turner Valley structure."

Two new fields were discovered by the company in 1929. These are between the Bow Island and Foremost Fields. One, the New Burdett structure, has been tested and proved to contain gas. The other, the North Foremost Field, is being tested with a diamond drill hole. Both these structures, when established as gas fields, will be held as reserves.

In 1929, some 33.91 miles of mains were added in cities and towns, making a total of 572.33 miles of mains and pipe lines. This is made up of 19.68 miles of field lines, 258.37 miles of main transmission lines, 44.03 miles of branch transmission lines, and 250.15 miles of distribution mains, of which 196.13 miles are in Calgary.

CALIFORNIA GAS NEWS

LOS ANGELES, Calif., Mar. 22.—The city council of Corcoran has granted a 25-year franchise to the Southern California Gas Co. to deliver natural gas to the city of Corcoran and near vicinity. Gas will be brought from Kettleman Hills by way of Hanford. The line will branch off 4 miles east of Hanford. The estimated cost is $94,000.

Purchase of the Modesto Gas Co. by the Pacific Gas & Electric Co., recently approved by the State Railroad Commission, has been given the official sanction of the board of directors of the concern in New York. The plant and its distributing system will be served with natural gas from Kettleman Hills and will complete the Pacific Gas & Electric direct line holdings in the valley.

TREND IN MANUFACTURE OF BY-PRODUCT GAS

Present trends in the manufacture and distribution of by-product gas and coke are discussed in the Mining Congress Journal by C. J. Ramsburg, vice president of the Koppers Co. of Pittsburgh, Pa., and director of the American Mining Congress, who points out that the by-product gas and coke industry is second only to the railroads as the largest industrial consumer of coal.

"Last year 76,000,000 tons of coal, or 1 out of every 6½ tons of bituminous coal mined in this country, were carbonized with by-product recovery, and this proportion is increasing yearly," says Mr. Ramsburg.

"Chemical research has been most productive," says Mr. Ramsburg. "Some of the outstanding developments have been carried in the field of gas purification, carried out under F. W. Sperr, director of research. Intensive research has developed various processes for removing hydrogen sulphide by means of liquid contact. So successful have been these investigations that 70 of these purification plants are now in operation in this country and elsewhere, including Japan.

"You may soon be using 'plate glass' in your automobile windows, and beautiful cups, saucers and plates on your table made 100 per cent from 'soft coal,'" says Mr. Ramsburg, who describes glass making a new by-product of liquid purification processes.

Coal as a chemical raw material, phenol removal processes, synthetic nitrogen and ash in coal and coke are other phases of the industry treated on by Mr. Ramsburg. Of developments in gas distribution he says: "It is very generally considered that in no field of public utility is there such great possibility for expansion as lies before the gas industry. Heating homes with gas, automatic hot-water heating, gas refrigeration and air conditioning are some of the developments that will cause this expansion."

MAY BUY WELLSVILLE COMPANY

BRADFORD, Pa., Mar. 22.—Reports are current that the Columbia Gas & Electric Corp. is negotiating to purchase the Empire Gas & Fuel Co. in Wellsville, and that representatives of the Columbia corporation have taken an option on the entire stock of the Empire Gas & Fuel and the Hornell Gas Light Co.

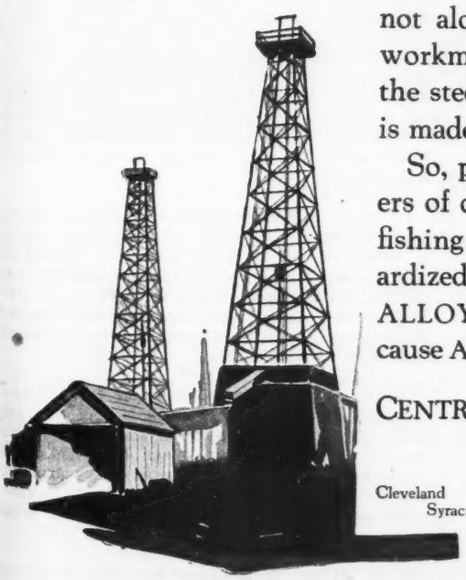
The Columbia corporation has numerous holdings in the Allegany oil field. Several months ago the old pumping station several miles east of Wellsville on the Andover road was acquired by the Columbia, and since that time the station has been reconstructed and pipe lines throughout this territory repaired for the purpose of transmitting natural gas from the Allegany Field to Binghamton and other eastern points.

The territory served by the Empire and affiliated companies now extends through several Allegany County towns as well as neighboring localities.

NEW SOURCE OF HELIUM

Work at the Chemical Research Laboratory at Teddington, England, has indicated a possible development of helium from monazite, which is available in many parts of the British Empire and especially in Ceylon and Travancore, India. Experiments indicate a yield of 1 cubic centimeter of helium per gram of sand. To fill a dirigible of 5,000,000 feet capacity, 150,000 tons of the sand would have to be refined. The process of extraction is, however, simple. In heating the sand for the manufacture of thoria, large quantities of helium are automatically released, and have heretofore been wasted.

Only Tools of AGATHON STEEL Have AGATHON Endurance



OPERATORS who carefully check tool service and tool costs recognize that efficient, low cost service depends not alone on tool design, or workmanship—but also on the steel from which the tool is made.

So, prominent manufacturers of drilling tools and fishing tools have standardized on AGATHON ALLOY STEELS—because AGATHON endurance can be secured from no other steel.

AGATHON ALLOY STEELS are the product of the world's largest and most highly specialized producer of alloy steels for oil field usage.

The AGATHON ALLOY Handbook contains complete data, as well as helpful suggestions relative to the proper selection of steels for all requirements. Send for a copy.

CENTRAL ALLOY STEEL CORPORATION, MASSILLON, OHIO

World's Largest and Most Highly Specialized Alloy Steel Producers

Makers of Toncan Copper Mo-lyb-den-um Iron

Cleveland Detroit Chicago New York St. Louis
Syracuse Philadelphia Los Angeles Seattle
Cincinnati San Francisco

Export Office: New York Central Building, New York, N. Y.

AGATHON ALLOY STEELS

MEN KNOWN IN OILDOM

H. O. Caster

Back in the days when grazing land represented the wealth of the great Southwest and before immense pools of petroleum had been discovered in that region, H. O. Caster, now a leading figure in the oil and natural gas industry, rode the plains of Texas and the Indian Territory as a young cowboy. After that he studied law and was admitted to the bar.

Mr. Caster's first connection with the natural gas business was as an attorney for the Kansas State Public Utilities Commission in 1914. He continued to hold this position for four years and during his term of office the famous Kansas natural gas case was tried in the Federal Court. In 1918 he joined the law firm of Stone & McDermott in Topeka, Kans.

On May 1, 1919, Mr. Caster became head of the legal department of the Empire Gas & Fuel Company with the title of general counsel. His headquarters were in Bartlesville, Okla. He was called to New York in 1925 to become a member of the executive committee of Henry L. Doherty & Company, being associated with Frank R. Coates in the management of the oil and natural gas division of the organization. Mr. Caster has appeared frequently on oil and gas convention programs as a speaker.

PERSONAL PARAGRAPHS

Alfred Wirth, of Erkelenz, Germany, recently paid a visit to London.

* * *

E. W. Bateman, president of the Bateman Oil Company, Fort Worth, Tex., has returned home from Shreveport, La.

* * *

H. L. Brown, independent operator of Fort Worth, Tex., has returned home from a business trip to West Texas.

* * *

S. A. Reed, second vice president and treasurer of the Bolsa Chica Oil Company, has been elected first vice president of the company.

* * *

W. A. Moncrief, independent operator, and chairman of the Yates Pool Advisory Committee, is on a business trip to Austin and Houston, Tex.

* * *

John Clark, former geologist for the Amerada Petroleum Corporation at San Antonio, Tex., is now in charge of the geological department of the Vacuum Oil Company, at Tyler, Tex. The Vacuum company recently opened a district office at that place, closing its office at Eastland, Tex.

L. C. Turman, independent operator of Fort Worth, Tex., has returned from a business trip in South Texas.

* * *

Ralph J. Bennett, formerly of Petrolia, Ontario, has taken a position with the Sullivan Diamond Drill Company of Chicago, to drill in the Turner Valley Field.

* * *

H. S. Thomas, formerly with the Tidal Oil Company, has been placed in charge of the geological department of the Tom Slick Oil Company at Oklahoma City, Okla.

* * *

C. A. Hale, manager of the Canadian Oil Companies, Ltd., refinery at Petrolia, Ontario, has been elected president of the Western Ontario Colts Curling Association.

* * *

E. W. Forrow, who covers the Santa Fe Springs, Calif., district for the Byron Jackson Company, will for some weeks be in the Pasadena Hospital undergoing treatment.

* * *

A. Owen Jennings has returned to Calgary, Alberta, from the Pacific Coast where he spent some months in connection with the organization of the Monte Christo Oil Company.

* * *

W. R. Ramsey and W. E. Ramsey, of the Ramsey Petroleum Corporation, of Oklahoma City, Okla., have returned home from a several weeks' vacation and business trip to California.

* * *

William C. Marshall, chief geologist for the California Mammoth Oil Company, Ltd., has left Los Angeles for Nicaragua, where his company has undertaken to develop a 500,000-acre lease.

* * *

P. F. Brown will be in charge of the office opened at Midland, Tex., by the Honolulu Oil Company, a subsidiary of the Honolulu Consolidated Oil Company of San Francisco, Calif.

* * *

Wesley Gish, with the Sinclair Oil & Gas Company, Tulsa, is spending a few days in the Fort Worth, Tex., office where he was formerly in charge of the land and geological departments.

* * *

Dr. Karl Krejci-Graf, geologist of the Steaua Romana Company at Campina, Rumania, has accepted appointment as professor of paleontology at the Sun-Yat-Sen University at Canton, China.

* * *

A. W. Peake, vice president in charge of oil production of the Standard Oil Company of Indiana, was spending a few days in Tulsa and expects to return to Chicago, Ill., within a week.

* * *

John Floyd, scout for the Pure Oil Company at Duncan, Okla., has been transferred to Mississippi. He expects to have his headquarters at Jackson, and will scout all the wildcats in the State.

* * *

R. W. McIllvain, vice president in charge of production for the Pure Oil Company, Chicago, is spending some time in Fort Worth and in East Central Texas, especially in the Van Pool, Van Zandt County, which the Pure company is operating.

* * *

H. Clark, president of the Laurel Oil & Gas Company, and S. L. Clark, vice president of the company, Philadelphia, Pa., have been spending some time in Fort Worth and East Central Texas. The company is purchasing leases in the latter area, and may possibly open an office in Tyler or Fort Worth, although nothing definite has been announced.

* * *

J. Brooke Reed, vice president and field superintendent of the Reed Oil Company, Muskegon, Mich., and Mrs. Reed have left for Los Angeles, Calif., in company with Mr. Reed's brother, Dr. Ralph E. Reed, of Los Angeles, prominent in the Pacific Coast division of the American Geological Association. Mr. Reed will make a three weeks' study of modern drilling and producing methods in the oil fields of California, Oklahoma and Texas. During his absence Clinton Reed will have charge of field operations of the Reed Oil Company.

Clarence W. Parsons, a member of the geological consulting firm of Parsons & King with offices in the Subway Terminal Building at Los Angeles, Calif., was recently married to Miss Eva Lois Reeves.

* * *

Fayette Gay, discoverer of the Zwolle Field in Sabin Parish, Louisiana, is a patient in the Mayo clinic recovering from disorders aggravated by overwork in connection with his activities in Zwolle during the past two years.

* * *

Byron S. Phillips, in charge of Pacific Coast advertising for The Texas Company, has been transferred to the advertising division of The Texas Company of Delaware, being at the present time en route to New York.

* * *

George D. Locke, vice president of the Barnsdall Oil Company, has returned from a trip to South America, where the Barnsdall company has been sending lubricating oils and other petroleum products for several years.

* * *

Leo Kenney, sales manager in the Shreveport, La., division for the Pan American Petroleum Corporation, has resigned, and with associates has taken over the distribution of Pan American products in the Shreveport territory.

* * *

R. J. Metcalf, head of the geological department of the Transcontinental Oil Company, Fort Worth, Tex., and John Shaw of the land and geological department of the same company, made a business trip to Tulsa via the Safeway Airlines.

* * *

G. H. Jaques, general superintendent of the Midwest Refining Company, attended a meeting of the company's board of directors in Denver, Colo., and from there went on into New Mexico and Texas to visit the company's operations in those States.

* * *

W. G. Woolnough, geological advisor to the Commonwealth of Australia, arrived at San Francisco, Calif., this month from his home in Canberia, Australia, en route to the annual meeting of the American Association of Petroleum Geologists at New Orleans, La.

* * *

Roy Walling and F. M. Murphy, who have been working with the Boller, Sherman & Boller firm in the Turner Valley Field, left recently for Oklahoma City, Okla., to spend a few weeks before proceeding to the Rumanian fields to drill for the Royal Dutch-Shell interests.

* * *

H. W. Lowrie, Jr., of Midland, Tex., has received notice of his appointment by Secretary of the Interior Wilbur as a member of the Federal Oil Conservation Board committee on economics. Mr. Lowrie is a member of the geological firm of Fisher & Lowrie, and recently moved to Midland from Denver, Colo.

* * *

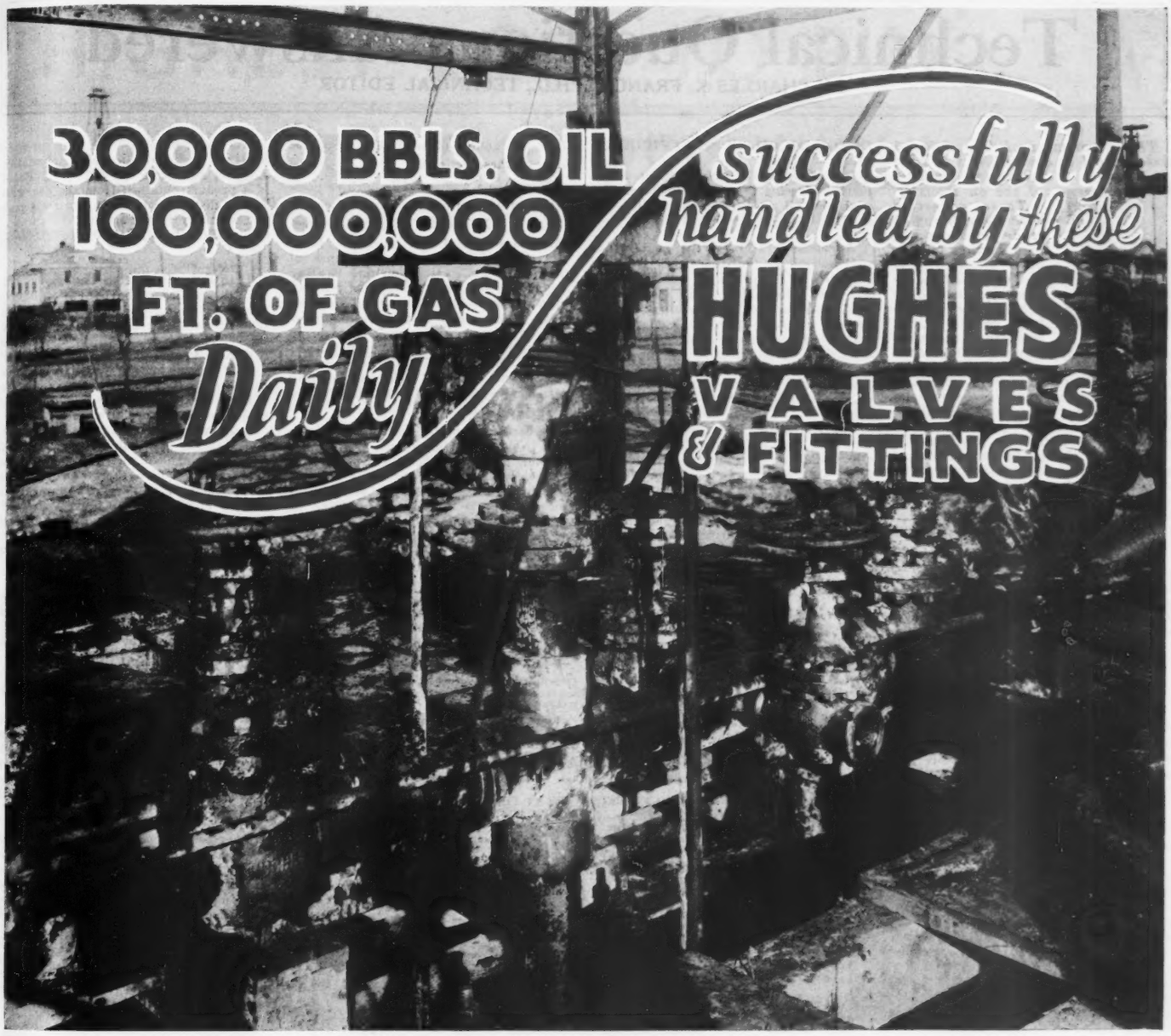
Dr. H. P. Bybee, geologist and mineralogist for the board for the lease of University lands, and G. E. Green, district geologist, and R. C. Briggs, assistant district geologist for the Vacuum Oil Company in North Central Texas, West Texas and New Mexico, were among San Angeloans who attended an initiation by Sigma Gamma Epsilon, geological fraternity, at Austin, Tex.

* * *

W. H. Roberts, general manager of the Acme Company, tire and battery subsidiary of the Louisiana Oil Refining Corporation since its organization as the first venture of an oil refining and marketing concern into such auxiliary business, has resigned. He is succeeded by A. S. Rawlins, sales promotion manager of the Louisiana corporation.

* * *

L. H. McBee, combination geologist, scout and land man for the Sun Oil Company at El Dorado, Ark., has been spending a few days at the company's main office at Dallas, Tex., and also attended the executive meeting of the National Oil Scouts Association at Fort Worth. Mr. McBee recently returned from a visit at his home in Fairview, W. Va., and on the return trip was painfully, but not seriously, injured by a sudden stop of the train on which he was traveling. He was laid up for over a week, and spent a little time getting about on crutches.



This picture shows the Wirt Franklin Petroleum Corporation's No. 2 Lowry Well, Oklahoma City — one of the most productive wells in that field.

SOLD BY SUPPLY STORES EVERYWHERE

The Hughes Valves and Fittings on this Hook-up are:
2—6⅝" A.P.I. Flanged End 5000 lb. Test Valves
2—6⅝" A.P.I. Flanged End 3000 lb. Test Valves
2—4", 8 thread, 3000 lb. test, Manifold Valves
1—6⅝" x 6⅝" 3000 lb. test Type "X" Cross
1—6⅝" x 4", 8 thread, 3000 lb. test, Type "Z" Cross

Rock Pressure when well was shut in was approximately 2200 lbs. There was not a leak.

SOLD BY SUPPLY STORES EVERYWHERE

HUGHES TOOL COMPANY

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant
HOUSTON,
TEXAS

Export Offices
Woolworth Bldg.
New York City, N. Y.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Question should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

TREATING UNIT CONTINUOUS PROCESS

Is it possible for you to give me a description of what is called the continuous process for the chemical treatment of gasoline? What chemicals are used in this process? Does gasoline ever contain acid?—M. W. T.

It was formerly the practice to subject gasoline to the final purification by means of chemicals in a special upright tank called an agitator and this was a batch system. These agitators were not fully enclosed so there was always a large evaporation loss and the capacity rate was low. The modern treating unit usually consists of a series of connected tanks that contain the treating solutions and through which the product is caused to flow. It is seldom necessary to treat gasoline with sulphuric acid but certain distillates are so treated and this step will be mentioned in the outline.

The first contact is made with concentrated sulphuric acid. The acid is held in coils, which are provided with baffle plates or some kind of packing for the purpose of breaking the stream and obtaining intimate contact of the acid and the oil or distillate. There are also special devices for introducing and mixing the acid which require little space and are very efficient.

All flow of the product being treated is upward, because the acid, treating solution and washes are all heavier than the oil. The oil flows from the acid treater to the settler where any acid that may be carried over is separated. The next tank may be a wash tank in which any traces of acid are removed by washing with water or an alkaline solution. It is then passed through another tank containing the doctor solution, next to a settling tank and through two tanks containing water, and finally a settling tank. The doctor solution contains litharge and caustic soda; sulphur is introduced into the doctor tank. The doctor solution contains about 2 per cent litharge with enough caustic soda in water to give a density between 12 and 15° Be.

There is little chance for a gasoline that has been through this process to contain acid. Occasionally samples of natural gasoline that have been treated with chlorine will show an acid reaction in the residue at the end of the distillation test.

COAL AND OIL FUEL EFFICIENCY

Can you furnish some reliable information covering the relative efficiency of coal and oil as used under stills?—H. S. T.

A common ratio for the quantity of coal and oil to the same work is 1 ton of coal and 3 bbls. of oil but this ratio has been determined under boilers and with both fuels of good quality. Seldom are the furnaces under stills adapted to both fuels and many furnaces are considered to be far from ideal for either fuel. Within the past few years great progress has been made in both furnace design for stills and the burning equipment.

The Bureau of Mines has issued Bulletin 302, Fuel Efficiency Tests on Batch Oil Stills, by Kreisinger, Argyle and Rice. This bulletin contains much valuable information on the subject. A comparison of the fuels consumed by refineries during 1925 and 1926 indicates a decrease of 4,000,000 bbls. of fuel oil, an increase of 62,000,000,000 cubic feet of gas, and increase of 94,000 tons of coke and slight decrease in coal.

The tests described in the bulletin are based on the operation of batch stills for topping, coking, and rerunning with the usual overhead products. These are outlined in the table following:

Operation	Charge	Overhead products	Residue
Topping	Crude oil	Naphtha, kerosene, gas oil distillate	Fuel oil
Coking	Crude oil	Naphtha, kerosene, gas oil, wax distillate	Coke
Rerunning	Wax distillate	Paraffin distillate	Fuel oil

The coal was fired with chain grate stokers and with underfeed stokers. A summary of the results is given below:

EFFICIENCY TESTS WITH COAL AND OIL

Weight of fuel per bbl. oil charged pounds	Duration of run hours and minutes	Heat lost in dry flue gases per cent	Efficiency per cent
Coal on Chain Grate Stoker			
19.71 to 35.31	19.55 to 35.45	36.2 to 48.8	34.1 to 47.3
17.41 to 26.95	12.20 to 24.45	22.7 to 29.1	49.7 to 59.0
11.26 to 27.73	14.50 to 26.55	20.7 to 34.5	44.6 to 54.8
33.75 to 46.91	24.40 to 37.30	36.0 to 45.0	26.9 to 36.4
29.26 to 33.70	18.20 to 27.20	28.8 to 30.1	44.8 to 47.4
Coal on Underfed Stoker			
a. Cold Air			
14.22 to 24.31	14.45 to 27.45	21.2 to 36.8	46.0 to 59.4
9.00 to 24.99	9.30 to 26.30	14.9 to 22.1	56.8 to 65.7
b. Preheated Air			
19.18 to 26.90	21.45 to 26.45	14.8 to 24.2	56.5 to 68.1
12.07 to 23.57	17.50 to 22.00	16.3 to 22.5	58.5 to 62.2
13.94 to 26.37	17.30 to 28.40	6.8 to 12.3	68.1 to 72.6
19.64 to 20.81	19.35 to 22.40	8.2 to 10.2	69.0 to 74.1
Fuel Oil			
10.49 to 13.98	18.00 to 13.10	16.4 to 22.2	54.1 to 59.6
24.16 to 24.88	60.10 to 66.45	31.6 to 40.2	37.8 to 43.2

The quantity of steam used varied from 22.3 to 40.9 pounds per barrel oil charged, and from 0.95 to 1.71 pounds per pound of coal fired; the average of 12 tests was 1.33 pounds per pound of coal.

The average efficiencies, based on tests considered typical of good practice, were, coal 32.5 per cent and for fuel oil 57.1 per cent.

REFINING OF CRANKCASE DRAININGS

I am extremely anxious to obtain information on the success, costs and methods used in the refining of crankcase oils and do not know of anyone to appeal to but you. I am not acquainted with prices paid for the drained oil, contracts or anything else.—H. H. K.

Crankcase oil may be reclaimed by suitable refining methods. This subject has been discussed on this page a number of times. See issues of May 24 and December 27, 1928; January 3 and 17, June 20 and September 19, 1929, for some of these articles.

There are a number of impurities present in crankcase oil, the most important include: Moisture, acid, road dust, particles of metal and gasoline. It is clear that adequate purification must include filtration, distillation and treating along lines similar to recognized practice in refineries. All crankcase oil contains some gasoline and distillation is necessary to remove this as well as to bring the lubricating oil to a commercial viscosity. Neutralization is required to correct the traces of acid and treating with acid and alkali is necessary to restore the purity.

It does not appear that one could afford to pay anything for the drained oil; in fact, it is the collection expense that frequently is reported as being the obstacle that stands in the way of financial success for the commercial refining of this oil. The actual cost for recovering a good grade of lubricating oil from crankcase drainings is said to vary between 5 and 20 cents a gallon. This does not include cost of containers and selling expense. Some sales resistance may be expected when endeavoring to sell a recovered oil in competition with that offered by a reliable refiner.

SPECIFICATIONS FOR MOTOR BENZOL

We desire to obtain a list of the characteristics of benzol for the purpose of preparing a set of specifications. This material is to be used for mixing with gasoline to make motor fuel.—W. L. S.

Commercial benzol is usually known as 90 per cent benzol. The pure product has a specific gravity 0.882 or about 29 A.P.I.; boiling point, 80.4° C., or 176° F.

Specifications which will probably serve your purpose have been prepared by the National Benzole Association, London, and these are outlined. Benzol is a product obtained from the gas when coal is distilled and the commercial grade is essentially hydrocarbons.

Specific gravity, 0.870 to 0.885 at 15.5° C.

Water, none.

Distillation 100 cc.—The vapor temperature shall not be less than 100° C. when 60 cc. have distilled. When the temperature has reached 120° C. at least 85 cc. shall have distilled. When the distilling temperature has reached 145° C. the volume of the distillate shall be at least 95 cc. The residue in the distilling flask shall remain liquid when cooled to 0° C. for 30 minutes.

Acid washing—This is a color test. The sample and sulphuric acid, equal parts, are shaken and the color of the acid shall not be darker than a solution of 5 grams of potassium dichromate in 100 cc. of a mixture of equal parts sulphuric acid and water. Full details of the test are given.

Total sulphur—Not above 0.4 per cent by weight.

Free sulphur—None.

Reaction—Shall not give a positive reaction for acids, alkalies, or hydrogen sulphide.

Crystallizing point—Not above minus 5° C.

GASOLINE YIELDS AND SOURCE

Would it be asking too much to give the percentage of gasoline obtained from crude oil in the United States for each year for a number of years back? Have you information showing the percentage obtained by refining and from natural gas?—G. C. A.

Data concerning the source of gasoline are usually based on records and estimates of the Bureau of Mines and these are published in various forms by the Western Petroleum Refiners Association, the American Petroleum Institute and other associations.

The yield of gasoline from crude oil and natural gasoline has been calculated to the percentage of the oil run to the stills by the Western Petroleum Refiners Association.

Year—	Gasoline to crude refined per cent
1918	26.1
1919	26.1
1920	26.8
1921	27.7
1922	29.5
1923	31.0
1924	33.1
1925	35.1
1926	38.5
1927	39.9
1928	41.3
1929	44.0

The source of all gasoline for 1928 has been estimated to be from straight-run running 55 per cent; from cracking 33 per cent, and from natural gas approximately 12 per cent.

The American Petroleum Institute has supplied the yield of gasoline according to different districts in the table below.

GASOLINE PRODUCTION BY DIFFERENT METHODS
(Thousands of barrels)

District—	Straight refining (Bbls.)	Straight refining Per cent	Cracking (Bbls.)	Cracking Per cent	Natural gasoline run through refineries (Bbls.)	Natural gasoline run through refineries Per cent	Total (Bbls.)
East Coast	29,700	55.3	21,790	40.6	2,204	4.1	53,694
Appalachian	10,583	66.6	4,579	28.8	732	4.6	15,894
Ind.-Ill.	30,211	54.2	23,279	41.8	2,226	4.0	55,716
Okla.-Kans.	36,553	60.0	19,758	32.4	4,632	7.6	60,943
Texas	43,051	43.2	30,849	38.2	6,963	8.6	80,863
La.-Ark.	13,429	50.4	8,141	30.5	5,082	19.1	26,652
Rocky Mountain	8,333	50.5	6,780	41.1	1,384	8.4	16,497
California	47,567	71.1	7,205	10.8	12,142	18.1	66,914
Total 1928	219,437	58.2	122,381	32.4	35,365	9.4	377,183
Total 1927	197,047	59.6	101,226	30.7	32,162	9.7	330,435
Tex.-La. Gulf Coast	39,581	47.9	23,587	40.6	9,557	11.5	83,725

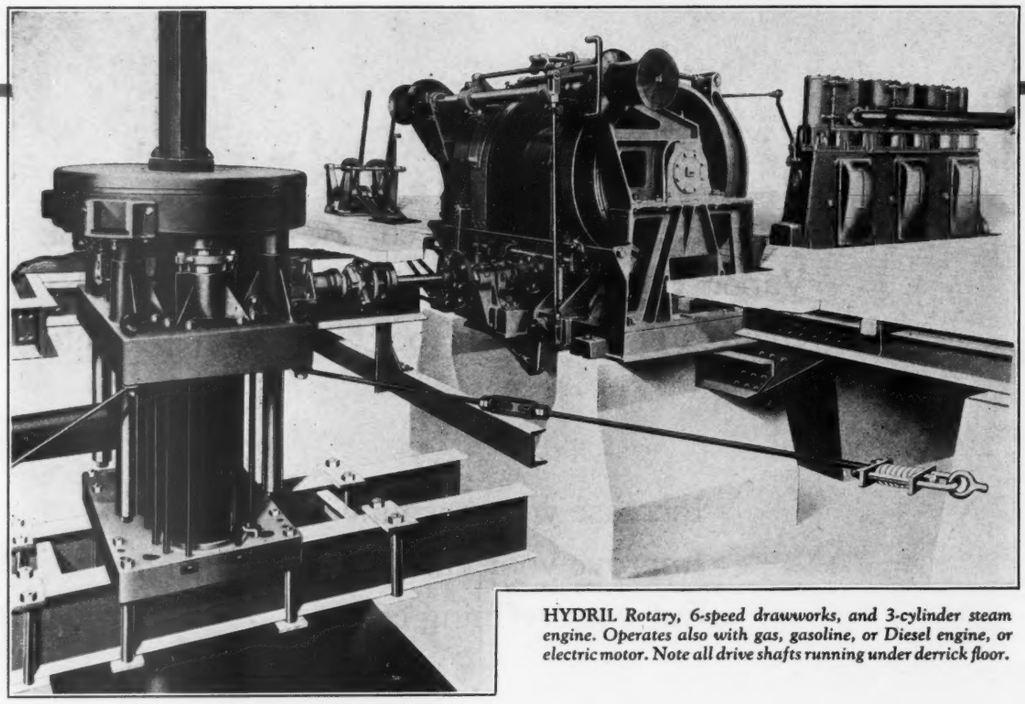
Have you considered the application of Vapor Phase Refining in your plant? The chances are that you too will find it possible to

Increase your gasoline yields,
Improve your gasoline quality, and
Cut your refining costs.

We will be glad to go over your own conditions with you and show you how.

THE GRAY PROCESSES CORPORATION
961-975 FRELINGHUYSEN AVENUE
NEWARK, NEW JERSEY

HYDRIL



HYDRIL *Rotary, 6-speed drawworks, and 3-cylinder steam engine. Operates also with gas, gasoline, or Diesel engine, or electric motor. Note all drive shafts running under derrick floor.*

DRILLING EQUIPMENT is bought for one purpose only... to produce the most oil at the lowest expense. First cost of drilling equipment is relatively unimportant . . .

HYDRIL is the highest-priced drilling equipment ever offered the oil industry . . . and the most economical!

TESTED AND PROVED

HYDRIL is the product of fourteen years of costly development . . . of building and operating and scrapping many outfits . . . of taking many chances in testing out promising new materials and untried methods . . . of "bugs" discovered and remedied at the manufacturer's expense . . . not the industry's . . .

HYDRIL is a unified, complete equipment, with power plant, drawworks, rotary, drill pipe, and gas control designed to work together with the greatest possible efficiency . . . self-contained and independent, without framing posts or headboards in the derrick . . .

NEW MANUFACTURING STANDARDS

HYDRIL is designed and built like the modern steam turbine . . . the great ocean liner or the finest automobile . . . no attempt is made to economize on parts, materials, or manufacturing processes if performance will be unfavorably affected . . .

Fast-moving drives are through shafts and cut, heat treated, hardened gears, running in Timken roller bearings. All castings are electric steel, proportioned for maximum strength with minimum weight. HYDRIL parts are manufactured to close tolerances insuring smoothest operation and complete interchangeability.

THE STRONGEST ENDORSEMENT

Major oil companies . . . after a year of the most searching tests under regular operating conditions . . . are now buying additional HYDRIL equipment.

In many cases *savings in drilling costs alone* have more than returned the first cost of HYDRIL on a single well . . . and reduced drilling cost is only one of many HYDRIL advantages.

HIGHEST COST TO BUY . . .

LOWEST COST PER WELL . . .

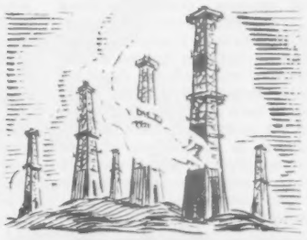
of any oil well drilling equipment in the world!

THESE FEATURES MAKE HYDRIL MOST COSTLY TO BUILD:

- Precise hydraulic bit feed
- Six-speed drawworks
- Clear working floor
- Safe, convenient control
- Elimination of fast-moving chains
- Stronger flush-joint drill pipe
- Ample lifting capacity in hydraulic table, independent of drawworks
- Tested, proved design
- Precision manufacture
- Self-contained, co-ordinated units
- Efficient, flexible prime mover
- Timken roller or special ball bearings throughout
- Machined, heat-treated, hardened gears
- Alloy-steel shaft drives

THESE ADVANTAGES MAKE HYDRIL CHEAPEST TO OPERATE:

- Speed
- Safety
- Controlled bit pressure
- Gas pressure control
- Straight vertical holes
- Maximum good core recovery
- Greater depth capacity
- Reduction of fishing jobs
- Longer wire line life
- Long equipment life
- Low maintenance cost
- Interchangeable parts
- Reduced power cost
- Portability
- Ease and speed of erection



Shop tools used in HYDRIL *production are constantly checked with the finest precision measuring instruments*

Boring a HYDRIL *rotary table. All machining operations are done to close tolerances with the most accurate jigs and special fixtures obtainable*

24 pages of easily read, illustrated information about cheaper—faster—safer—straighter—deeper oil well drilling—free!

DOHENY STONE DRILL CO.
714 West Tenth Street • Los Angeles, California
Cable Address—HYDRIL Los Angeles

SEND FOR THIS BOOK

DOHENY STONE DRILL COMPANY
714 West Tenth Street, Los Angeles, California
Please send me "The Story of Controlled Drilling"
. . . no charge or obligation . . .

Name_____
Company_____
Address_____

Bore Hole Surveying by Orientation

Equipment Developed for Oil Field Use and Depending Upon Surface Orientation Makes Use of Ordinary Tubing or Drill Pipe

By R. P. McLaughlin
Petroleum Engineer and Geologist, Los Angeles, Calif.*

Surveying the underground course of oil wells is a practice which has demonstrated its utility and will doubtless come into more widespread use. There has been manifest a certain timidity on the part of oil operators to survey their wells due to possible legal complications involving the question of ownership of underground deposits beneath various tracts of land. This obstacle is probably not so important as it might at first appear. The oil industry is one of the most progressive and can be depended upon to solve satisfactorily such problems as soon as they are fairly confronted and studied. A recent instance illustrating such ability is the subject of unit operation of oil deposits which was not more than five years ago unanimously condemned and now a majority of the most influential organizations in the industry are endeavoring to perfect the plan and put it into use.

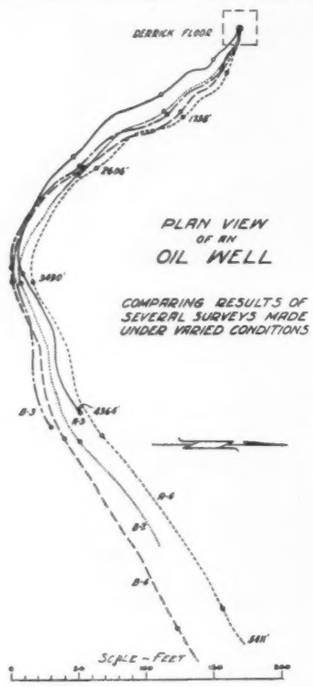


Plate 1.

Since the drilling of deep wells has become necessary their cost has mounted rapidly and the large investments in such work demand consideration of all pertinent facts and conditions. The legendary policy of the ostrich hiding its own head and thereby imagining that its entire body is protected has no counterpart in the mental processes of the progressive oil operator. Success in the oil business has followed the ability to face facts, whether pleasing or not, and then to adjust operations in accordance with the demonstrated conditions.

Remarkable Advance

It has been only a comparatively short time since investigations demonstrated the lamentable and widespread results arising from failure to drill wells vertically. In this short period there has been such a remarkable advance in drilling operations that extremely crooked holes are now less frequently drilled. However, in order to drill wells vertically it is necessary to spend more time and money than before and there is doubtless an economic limit which it will be found unnecessary to exceed. The determination of the economic limit for straight drilling, in addition to the need for complete information as to underground conditions in order to direct various new production and conservation methods will stimulate bore hole surveying.

Instruments and equipment for surveying wells are now available for use by geologists and engineers and it therefore seems timely to present data showing what degree of accuracy may be expected from various methods. It is not the purpose of this paper to describe fully the details of manipulation of any particular process but merely to set forth the results which can be obtained by one general method which has been thoroughly tested by actual use in many oil wells.

Any survey, whether on the surface or underground, must yield data from which both a plan and vertical cross sections can be drawn, if the survey is to be considered as complete. The mere determination of vertical angles along the course of an oil well, as it is done with the very useful acid bottle, does not constitute a complete survey. In addition to measuring inclination, it is also necessary to determine the horizontal components of the various sections of the hole, or, in other words, to determine its direction or orientation.

The art of bore hole surveying is not new and technical literature affords many descriptions of apparatus and methods. However, none of the described methods seems directly applicable to oil field operations but requires certain adaptations in order to be quickly and economically used.

Two Ways

In all of the various surveying methods orientation, which is equivalent to the measurement of angles in horizontal planes, is accomplished in two ways. One method involves the use of an instrument containing some sort of compass which indicates the direction towards which the instrument is inclined. The compass may be of either the magnetic or gyroscopic type. The second method involves the use of an instrument inserted into the hole by means of tubing to which it is rigidly attached, and the direction of inclination of the instrument is determined by observing the degree of rotation of the portion of pipe projecting above the ground surface. The last mentioned method is the one more particularly dealt with in this paper.

Both compass orientation and orientation from the surface have been extensively used. The magnetic compass appears to have given satisfactory results where the rock was not magnetic. The magnetic compass will not function satisfactorily inside of iron or steel pipe and is therefore useless in oil wells where casing is present. Orientation from the surface has been extensively used to survey bore holes in magnetic iron deposits.

Surveying equipment developed for oil field use and depending upon surface orientation makes use of the ordinary tubing or drill pipe with which all wells are regularly equipped. The instruments are light and compact and their handling involves nothing but the routine procedure common to inserting either tools or pumps in wells. Some instruments are of simple construction and their operation is but little more difficult than that of an ordinary surveyor's transit. Of course the operator should have as much technical training as is required to conduct ordinary surveying and mapping operations.

Widely discrepant results have been reported from the attempts to survey oil wells and the accuracy of the various processes has been frequently questioned. It is impossible to state whether a particular survey was accurate or otherwise unless it is known exactly what procedure was followed. Recently published popular descriptions of some instruments indicate that they have been designed without knowledge of the limitations imposed by nature and by the same token it is probable that some attempts at surveying have been made without sufficient regard to the physical and mathematical laws which govern such matters. However, the older descriptions appearing in purely technical publications give data upon which opinions as to results can be reasonably based.

Exacting Requirements Met

Probably the most exacting requirements for accurate surveying methods have accompanied the drilling of numerous bore holes around a small plat of ground which was to be frozen so that a mine shaft could be excavated. The distance between such bore holes is frequently less than three feet and they are carried to depths ranging from 500 to 1,500 feet. Horizontal deviation of not more than 35 inches at a depth of 420 feet is found in one set of specifications[1], and in another hole drilling is reported to have been so nearly perfect that there was a horizontal deviation of only 1¾ inches at a depth of 534 feet.[2]

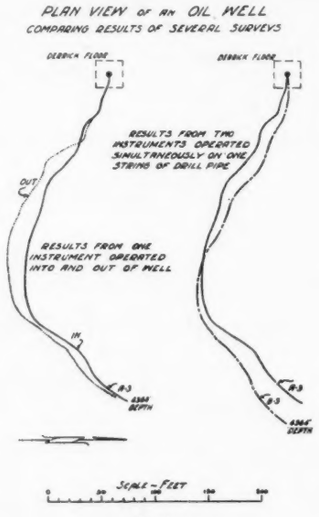

PLAN VIEW OF AN OIL WELL
COMPARING RESULTS OF SEVERAL SURVEYS
DERRICK FLOOR
DERRICK FLOOR
RESULTS FROM TWO INSTRUMENTS OPERATED SIMULTANEOUSLY ON ONE STRING OF DRILL PIPE
OUT
RESULTS FROM ONE INSTRUMENT OPERATED INTO AND OUT OF WELL
IN
B-3
B-3
SCALE - FEET

Plate 2.

It is not likely that the technical men in the oil industry will soon be called upon to equal such results either in drilling or surveying, but it is interesting to know that both purposes can be accomplished. In the last mentioned hole orientation was from the surface, whereas the method was not specifically described in the other cases noted.

Diamond Drill Prospecting

In the course of diamond drill prospecting in the iron deposits in Michigan, both the magnetic compass and surface orientation have been used and checked against each other.[3]

In one hole, 1,697 feet deep, having a diameter of about two inches with a total horizontal deflection of about 262 feet, plats by the two surveying methods checked each other within 12.7 feet at a depth of 1,500 feet. The author states that repeated surveys indicated that in several places the magnetic compass bearings did not agree because of the presence of casing which had been left in the hole. It is interesting to note the accompanying tabulated record which makes a comparison between compass bearing and surface orientation at various depths.

Depth (feet)	Inclination (°)	Course of hole: Magnetic compass	Course of hole: Surface orientation
100	1	N. 73° E.	M. 85° E.
300	2¼	S. 42° E.	S. 36° E.
500	4	S. 24° E.	S. 2° E.
700	3½	S. 38° W.	S. 30° W.
900	5	S. 25° W.	S. 47° W.
1,100	11	S 51° W.	S. 52° W.
1,300	19	S. 77° W.	S. 81° W.
1,500	24¼	N. 85° W.	N. 86° W.
1,700	26	S. 77° W.	No test

The course of the hole is shown by Plate 5 which is computed and platted from the above mentioned tabulation. It is particularly interesting to note the comparatively slight difference between the two surveys although the bearings of some of the courses are widely divergent but the discrepancies are in the opposite directions and therefore compensating. These two surveys were each comprised of only seven separate courses or readings and a comparison with oil well surveys consisting of many times more readings show the latter to be relatively more precise.

Mr. White says that surface orientation is accurate only when rods turn easily in the hole, which is usual except in holes of great depth, low inclination, or excessive curvature. In these exceptional cases he says that, unless the hole is rifled, twist can probably be removed from the pipe by raising or lowering it a few feet. This latter prediction has been amply demonstrated to be correct at recent oil well surveys, as will be noted below.

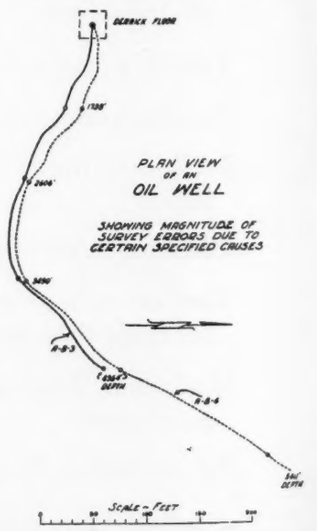


Plate 3.

Surface Orientation

One of the most interesting descriptions relating to surveying of bore holes by surface orientation describes work done at magnetic iron deposits in Sweden.[4] A detailed technical report of the methods used and the results ob-

*Published in The Oil and Gas Journal by courtesy of the Bulletin of the American Association of Petroleum Geologists. Paper presented before the A.A.P.G. at the New Orleans meeting, March 21, 1930.

[1]Shaft Sinking Under Difficulties, by J. Riemer, New York, 1907.

[2]Prof. Henry Briggs, 1926, Royal Society of Edinburg, Volume 46, Pages 223-229.

[3]E. E. White, 1912, Trans. A.I.M.E., Volume 44, Pages 77-79.

[4]Sven Lundberg, Eng. & Min. Journ., April 26, 1924, Page 690.

FLEXIBLE THINGS ENDURE

THE PANTHER FOLLOWS JAGGED MOUNTAIN TRAILS WITHOUT INJURY TO ITS YIELDING PAWS

THE FLEXIBLE CUPS OF THE GUIBERSON SWAB TRAVEL THROUGH WRINKLED, DENTED AND PITTED CASING WITHOUT INJURY AND WITHOUT LOSING ANY OF THE FLUID . . .

PROTRUSIONS in the casing mean only one thing to the flexible cups of the Guiberson Swab . . . they must give way until the obstacle has been passed and then continue on up the casing . . . with no rubber torn, no sticking and no fluid lost back into the hole. They weren't put in to fight protrusions but to lift oil, and that's what they do . . . every drop of it.

To make sure that the cups will give way properly, guide wires steer the cup rims while they are passing such protrusions. For the rest of the time, these rims are pressed firmly against the casing wall, under the weight of the column of fluid, and the heavier the column, the tighter the cup rims are pressed against the casing, firmly sealing up the load. While running in, pressure from below colapses the cups, allowing far speedier passage into the hole. Rubbers are made of special composition which will not deteriorate even after weeks in high gravity oil. The Guiberson Swab, with endurance similar to its cups', continues to hold the record for doing most of the world's swabbing . . . ***Fully Patented.***

"Better Be Safe Than Sorry"
THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas
California Branch: 1506 Santa Fe Ave., Los Angeles
621 Kennedy Bldg., TULSA | 321 S. Osage St., PONCA CITY | 506 Trust Bldg., NEWARK, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

tained was published after an exhaustive investigation by a technical commission.[5] In that report it is noticeable that the general shape or divergence of the bore holes investigated was similar to occurrences found in oil fields. One hole, 1,300 feet deep, was deflected 488 feet and the inclination from vertical ranged from 0° at the surface to 40° at bottom. The diameter of the hole ranged from 2¼ inches at the top to 1½ inches at the bottom.

Two instances are cited by Lundberg where surveyed holes were later intersected by mine workings and actual checks of survey accuracy were thereby obtained. One hole 450 feet deep, vertical at the top and inclined 5° at the bottom, checked within less than 2 feet. The second case was a hole 430 feet deep with 100 feet deflection which was found in the mine workings "almost exactly at the spot where it had been indicated to be." One hole, 1,000 feet deep with 360 feet deflection, was repeatedly surveyed with identical results.

Lundberg is of the opinion that the method fully answers the needs for diamond drill holes. Petersson states that "in order to test the reliability of this method the commission has carried out thorough and practical tests in Klacka Lerberg and Streiberg and good results have been attained. It was found that a string of tubing is not exposed to any torsion worth mentioning as a result of friction in the bore hole, not even when the bore hole may be curved."

In the Oil Fields

Having briefly reviewed the results obtained in other industries, it is pertinent to present results observed in the oil fields. However, it may be well to pause in the midst of consideration of definitely ascertained facts and mention the theoretical side of the question. The writer has heard numerous discussions bearing on the impossibility of accurate surveys at great depth where surface orientation is depended upon. Many of the arguments advanced have been both ingenious and stimulating, but as a basis for technical discussion they have lacked the support of results obtained by actual tests. Furthermore the rigid and straightforward process of reasoning requisite to consideration of a problem in analytical mechanics has usually been absent. Imagination has too frequently been relied upon in place of observed facts. Therefore, until theoretical discussion is placed upon a more substantial foundation it seems scarcely necessary to depart from the consideration of observed conditions.

During the past year the writer has had occasion to survey a great many oil wells ranging in depth from 4,000 feet to more than 8,000 feet. All of this work has been performed for other parties and the results were therefore confidential and not available for publication. However, an opportunity was recently presented, through the co-operation of one of the large oil companies operating in California, whereby numerous surveys could be made for the prime purpose of comparing several methods and determining their degree of accuracy. Permission to use certain data has also been obtained from several other oil companies. Where a continuously recording instrument is used it is possible to make a duplicate or checked survey without the expenditure of much additional time, by simply taking the results obtained while the instrument is being withdrawn from the well in addition to those obtained while the instrument is being run into the well. With such an instrument it is also possible to perform various experiments to determine what is happening underground during the course of a survey.

Test Surveys

In making the series of tests surveys above mentioned a well was chosen where repeated surveys had already been made during the process of drilling. It was decided to use two different strings of drill pipe, two instruments of radically different construction and also several methods of measuring rotation or orientation. The instruments were used simultaneously, that is, one was mounted directly below the other and rigidly attached to the lower extremity of the drill pipe. Readings by the instruments were made after each additional stand of pipe (averaging 88 feet in length) was inserted in the well. Some of the surveys were made to a depth greater than 6,000 feet.

The inclination of the well from vertical was found to be a variable quantity and did not conform to a smooth curve. A drawing showing the full vertical section is too large for reproduction in this paper. A fair idea of the general downward course of the well is afforded by the following tabulated statement:

Depth (feet)	Inclination from vertical
300	0° 50′
600	3° 50′
900	3° 0′
1,200	1° 50′
1,500	3° 20′
1,800	7° 0′
2,100	2° 40′
2,400	4° 20′
2,700	5° 30′
3,000	6° 10′
3,300	5° 50′
3,600	8° 30′
3,900	9° 0′
4,200	7° 20′
4,500	10° 0′
4,800	10° 40′
5,100	9° 25′
5,400	10° 40′

The final result of all the tests is shown by Plate 1, which is in general self-explanatory. The letter A denotes results obtained by one instrument, while B denotes the results obtained by the other instrument. The number accompanying each letter denotes the particular test (for instance, A-3 denotes the results obtained by the first instrument during Test No. 3). The results of Test No. 1 are omitted because it went only a very shallow depth and disclosed but little of importance.

A description of the instruments is not necessary at this time except to state that both had been extensively used and were of radically different construction. One made a continuous record on a strip

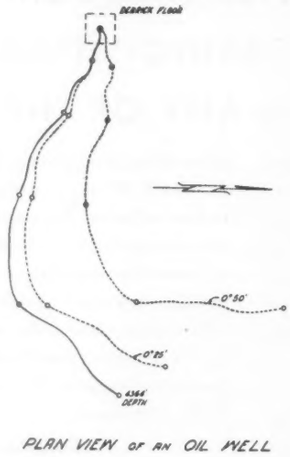

DERRICK FLOOR
0°50'
4364 DEPTH
PLAN VIEW OF AN OIL WELL
ILLUSTRATING RESULTS ARISING FROM CUMULATIVE ERRORS IN ORIENTATION OF SURVEY
SCALE - FEET

Plate 4.

of paper while the other made an intermittent record upon photographic film.

Test No. 2 used drill pipe having 5½ inches outside diameter and carrying an instrument container 7⅝ inches in diameter. Test No. 3 used drill pipe of 4½ inches outside diameter and carried an instrument container 5 inches in diameter. Test No. 4 used drill pipe 5½ inches in diameter with a 5-inch instrument case. The inside diameter of the well casing was 7¾ inches.

Action of the Pipe

The variety of drill pipes used and the variation in the size of the instrument case gave opportunity to observe differences which might arise from the action of the pipe due to such causes as friction and elasticity. The use of two instruments operating simultaneously and under identical conditions demonstrated the amount of divergence due entirely to instrumental inaccuracies. Separate measurements of rotation of the drill pipe gave a basis for comparison of such methods.

The possible source of errors in surveying bore holes by means of orientation from the surface are three in number, namely, instrumental inaccuracy, measurement of orientation and erratic behavior of pipe. The above mentioned test was therefore conducted in such a manner as to appraise fairly the magnitude of error arising from each of one or all the sources which can affect the final result.

Instrumental inaccuracy must be reckoned with in all methods of surveying. It would be difficult if not impossible to economically construct an instrument, small enough to insert in a bore hole, which would be entirely free from error. However, it is possible to reduce the error within narrow limits and it is furthermore quite feasible to design an

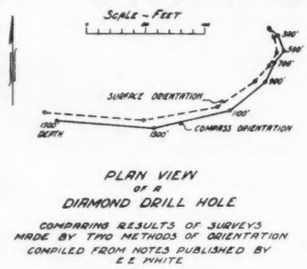


Plate 5.

instrument which can be operated so as to neutralize the effect of its inaccuracy. The magnitude of discrepancy due entirely to instrumental inaccuracy is shown on Plate I by comparison of lines A-4 and B-4 which are produced under conditions identical in all respects except the action of the instruments. Comparison of Lines A-3 and B-3 also measures the limit of instrumental inaccuracy and this pair of lines is separately shown on Plate 2 in order to give a clearer view of them.

Instrumental Errors

For the purpose of deducting or segregating instrumental errors from the total error a median or average line may be drawn between Lines A-4 and B-4. This median line approximately contains only errors arising from the other two possible sources, namely, rotation measurement and behavior of the pipe. A similar median between Lines A-3 and B-3 serve for the same purpose. Plate 3 shows the two median lines developed from tests numbered 3 and 4 and indicates the limits of error arising from inaccurate measurement of orientation and plus any effect of erratic behavior of the drill pipe.

Consideration of the magnitude of errors arising from inaccurate measurement of pipe rotation is a wide subject, lying entirely within the scope of general surveying above the ground surface. It is simply a problem of accurately measuring angles in a horizontal plane. Probably the most accurate measurement of horizontal angles is that made in geodetic surveying where a triangulation network is being established at the expenditure of almost unlimited time. In view of the narrow margin to which we have reduced errors, as shown by Plate 3, it is sufficient to state that the measurements of rotation made during the present tests were recognized as being not absolutely accurate. However, all the results here presented are on a uniform basis and are reasonably accurate. While an oil well is being surveyed all of its drilling or producing operations are at a standstill and therefore time must be economized by sacrificing absolute precision. The map on Plate 5 suggests the comparatively narrow limits to which compensating errors in orientation may extend. Plate 4 is presented to illustrate the very great errors which will follow the introduction of constant errors, each of apparently insignificant small dimensions but repeated at each observation and always in the same direction.

In concluding the discussion of errors in measuring orientation it may be said that the methods used during the series of tests and also in common practice are sufficiently inaccurate to fully cover all the divergence shown on Plate 3 without searching for possible errors due to erratic behavior of the pipe. This conclusion is in accordance with that stated by Petersson.

Accuracy of Tests

Accuracy in determining vertical distances depends upon tape line measurement of the drill pipe together with instrumental measurement of vertical angles. The subject demands only brief mention because correct results are readily obtained. There was a variation of less than 1 foot vertically between results of the two deepest surveys shown in Plate 1.

Although the previously outlined tests indicate that the drill pipe or tubing upon which an instrument is being operated, is not the source of appreciable error, it is possible to present other more direct evidence to substantiate this conclusion.

In order to determine the effect of friction between the drill pipe and well casing, tests were made to determine how much twist could be put into the drill pipe. At test number three with 5½-inch drill pipe, at a depth of 4,364 feet, the pipe was turned and the rotation measured both at the top and bottom of the string of pipe. When the instrument was first landed at the given depth it was allowed ample time to record its position, and then the rotary table on the derrick floor was turned almost half way round (161 degrees to be exact), and the instrument was again allowed time to record its position. Next the pipe was lifted through the length one stand of pipe (88 feet) and again lowered to the given depth and time allowed for instrumental recording. The raising and lowering of the pipe was repeated several times. Comparison of measurements made at the derrick floor and at the instrument showed that when the pipe was first turned, without being

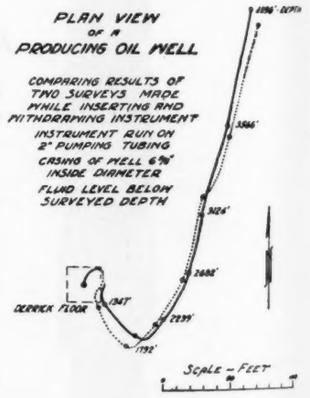

PLAN VIEW
OF A
PRODUCING OIL WELL
COMPARING RESULTS OF TWO SURVEYS MADE WHILE INSERTING AND WITHDRAWING INSTRUMENT
INSTRUMENT RUN ON 2" PUMPING TUBING
CASING OF WELL 6⅝" INSIDE DIAMETER
FLUID LEVEL BELOW SURVEYED DEPTH
DERRICK FLOOR
SCALE - FEET

Plate 6.

raised and lowered, the instrument at the bottom turned only 137 degrees while the top of the pipe turned 161 degrees. In other words, a twist amounting to 24 degrees was put in the pipe. After the pipe was raised and lowered once the instrument showed that it had turned through the same angle as had the top of the pipe. In other words, the raising and lowering of the pipe had entirely freed it of twist. Each of the subsequent raising and lowering operations showed the same amount of rotation at both the top and bottom of the pipe. This result confirms the previously mentioned prediction made by White.

Test of Rotation

This test of rotation at the top and bottom of the pipe had previously been noted many times by the writer where check surveys were made with a continuous recording instrument while it was being run into a well and while it was

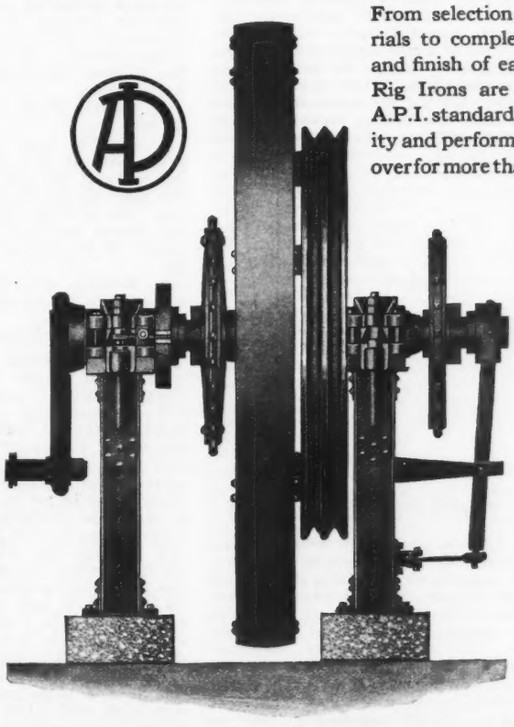
(Continued on Page 157)

[5]Walfr. Petersson - Jernkontoret Annaler (Stockholm), May 31, 1922, Pages 224-262.

"And say, Mac"—

"WE'RE rigging up No. 41 now .... Yeah, we're using Parkersburg Rig Irons .... Every part fits perfectly so they're going together fast .... Yep .... all A.P.I. .... They'll give us the service, all right .... Sure .... See you later."

And later, the "Super" will find even greater satisfaction in Parkersburg Rig Irons through the longer life and trouble-free performance secured. For the castings are special High Test, carefully moulded; the forgings sturdy and smooth.



From selection of raw materials to completion of design and finish of each unit, these Rig Irons are held to rigid A.P.I. standards. Proven quality and performance the world over for more than thirty-three years inspires confidence in Parkersburg Equipment to meet every deep-drilling demand of today.

PARKERSBURG PRODUCTS

Rig Irons
Steel Derricks and Crown Blocks
Chain-Driven Sand Reels and Bailing Reels
Steel Wheels (Bull, Band and Calf)
All-Steel Standard Rigs
Bolted Steel and Aluminum Tanks
Portable Drilling Machines (Wood and Combination-Steel)
Miscellaneous Drilling Equipment
Steel Walking Beams and Pitmans

We subscribe to A.P.I. Standards

THE PARKERSBURG RIG AND REEL CO.

TRADE MARK REG

THE PARKERSBURG RIG AND REEL COMPANY

Main Offices and Works

PARKERSBURG, WEST VIRGINIA

NEW YORK - TULSA - FT. WORTH - HOUSTON

Branches In All Active Fields

Crooked Hole Problems on Gulf Coast

Straight Hole Practice Lessens Dry Holes, Increases Average Production Per Well and Lowers Lifting Cost

By P. C. Murphy[1] and Sidney A. Judson[2]*

The general practice of crooked hole surveying in the Gulf Coast was introduced in the latter part of 1928 by one of the operators, who used the method of obtaining deviations from the vertical by lowering into wells glass bottles partly filled with hydrofluoric acid, which method was adopted by several of the other companies. To increase the speed and accuracy of surveys various types of clinometers were developed. A few operators also orient the drill pipe when clinometers are run into the hole, to determine the direction as well as the amount of deviation. One company successfully uses a recording magnetic compass for direction, combined with a mechanical device for determining deviation from the vertical. Another apparatus consists of a cylinder containing a magnetic compass floating in melted wax. The wax solidifies when left in the well a sufficient time, and holds the compass fixed in the wax. This method has not been extensively used.

Recording Fluid Levels and Recording Clinometers

The method of survey with hydrofluoric acid bottles as used in the Gulf Coast is similar to that described by Doctor Lahee,[3] with the exception that in many cases the containers holding the bottles are run into the hole by being placed in special tool joints spaced at desired points in the drill pipe. The advantage of the acid bottle method consists in its simplicity and positive action. A considerable disadvantage is the length of time the bottles must be left in the hole to properly etch the glass without permitting circulation of the mud or movement of the drill pipe. This increases the danger of unconsolidated formations caving into the hole and causing a fishing job.

The instruments of the recording clinometer type are usually equipped with timing devices to secure readings at regular intervals. They are placed in fluid tight cylinders designed to resist the high pressures found in deep mud-laden holes and are run into the hole on the end of the drill pipe and stopped for short periods of time at the depth at which the readings are desired. The usual time between successive readings is five minutes. The advantage of this method over the acid bottle method is that many successive readings are possible and a complete survey of the hole may be made with one run of the instrument. The short time that these instruments remain in one position greatly reduces the danger of sticking the drill pipe. In addition the connection with the bottom of the drill pipe is so designed that circulation is possible between readings, although in actual practice this is seldom required. These instruments may also be used in directional surveys which make use of orienting the drill pipe.

Recording Magnetic Compass and Clinometer

One company uses a compass in uncased holes that automatically records magnetic north and south at the same time that the inclination of the hole is registered by mechanical means. Only one reading can be taken in one run by each instrument, but several instruments can be run into the hole at once with their timing devices set to register at different times. The instruments may then be moved up or down between readings, and records from several depths may be obtained with one run. The instruments are enclosed in a fluid tight nonmagnetic metal cylinder and are run on the bottom of the drill pipe, but separated from it by a spacing nipple of nonmagnetic metal at least 10 feet in length. Readings with magnetic compasses taken with different instruments at the same depth usually check each other for direction within 1° to 7° when the hole makes an inclination with the vertical exceeding 2°. The accuracy is not limited by the compass reading, but by the degree of precision of the clinometer.

TABLE 1—COMPARISON OF ORIENTED DRILL STEM SURVEYS WITH MAGNETIC COMPASS READINGS

	Oriented drill pipe: Amount of hole included in survey	Oriented drill pipe: Computed direction of bottom reading	Magnetic compass: Depth	Magnetic compass: Recorded direction	Variation of oriented method from magnetic compass: Amount	Variation of oriented method from magnetic compass: Direction	Variation per 100 ft.
Well No. 1	0 to 4,176′	N 81½ W	4,195′	S 84 W	14½°	Clockwise	0.34°.
Well No. 1	4,176 to 5,112′	N 88 W	5,179′	N 88 W	0°	.....	0.00°
Well No. 2	0 to 2,208′	S 64 E	2,207′	S 70 E	6°	Clockwise	0.27°
Well No. 2	2,208 to 2,962′	S 54 E	3,006′	S 51 E	3°	Clockwise	0.39°

Orienting Drill Pipe

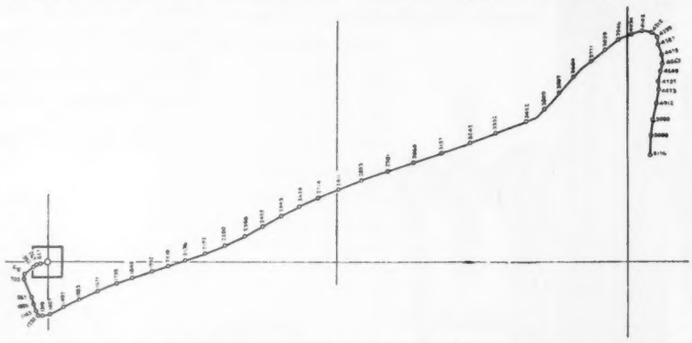
Orienting has been used extensively in California and occasionally in the Mid-Continent. Recently a few operators are using it in the Gulf Coast, some with satisfactory results. When orienting the drill pipe, coastal operators make use of various types of clinometers which record at regular time intervals. The clinometer is placed on the bottom of the drill pipe and the rotation of the drill pipe is measured as the instrument is lowered into the hole. The direction of the hole with relation to a north and south line can then be computed.

The accuracy of surveys with the oriented drill pipe has often been questioned on account of supposed torque in the drill pipe as it is lowered into the hole. Table 1 compares typical cases of the directions obtained in uncased holes by orienting the drill pipe, with the directions recorded at approximately the same depths by the magnetic compass.

The wells listed in Table 1 are all on the flanks of salt domes and are reasonably straight. The four examples given in the table show an average difference of 0.25 of 1° per each 100 feet. The direction obtained by the oriented drill pipe are usually slightly in a clockwise direction from those obtained with the magnetic compass. The compass readings are believed to be essentially accurate, and the results of orienting to be slightly in error, although not enough to detract from the practical value of the method. It should be noted that several slightly different methods of orienting drill pipe are in use, and that the various mechanical conditions imposed by these several methods will likely produce results which vary slightly from each other. Accordingly each method should be checked against compass readings to determine the individual factor of variation. The practice used here is to obtain compass records at least every 1,000 feet in an uncased hole and then correct the oriented survey to agree with the compass readings. Since a compass of the ordinary type will not give correct readings in a hole that has been cased, the oriented drill pipe method is used in such wells. The results are then corrected by using the factor of variation between oriented readings and magnetic compass records that have been previously determined by surveying a large number of uncased wells with both methods.

Results of Surveys

The first surveys of a considerable number of wells indicated to the operators that the average hole varies considerably from the vertical and that the deflection of a hole 5,000 feet deep might be as much as 150 to 400 feet. Surveys with instruments which measured the amount, but not the direction of deviation from the vertical, showed that the crooks usually started at the point where the bit reached hard or broken formations dipping at steep angles just below soft formations. If thick shales were found beneath the hard formations, the holes continued to make an angle with the vertical but usually of a less degree. The type of survey mentioned showed whether the hole was straight or crooked, but it did not explain why adjoining wells with small angles of deviation would occasionally vary so much in depth to the pay sand. The average width of production of a single member of a sand body on the flank of a dome averages only 150 to 500 feet. In deep wells this narrow zone may be missed by wells making only small angles with the vertical provided the direction of the well is directly toward or away from the dome.



Horizontal projection of a survey of a flank well on a Gulf Coast salt dome using the oriented drill stem method checked for direction at 2,832 feet with magnetic compass.

It was first thought that most crooked holes went down dip and away from the salt dome, but the surveys indicated that this could not be so. Directional surveys were plainly needed and a few operators started to adopt instruments and methods for this purpose. Both recording magnetic compasses and the oriented drill pipe method were used for determining direction.

The directional surveys obtained by these methods show that crooked holes are about equally apt to go down dip away from the dome, up dip toward it, or clockwise along the periphery of the dome, or any combination of these three directions, but that holes seldom go in a counter-clockwise direction along the flank of the dome. It is found that whenever a hole becomes very crooked and takes a certain direction, it usually continues in that general direction as long as it keeps the same approximate angle of inclination. However, if such a hole tends to become vertical for a short distance and then becomes crooked again, it usually takes a different direction than before.

Drilling Practice to Keep Holes Straight

Current articles in oil field technical publications give in detail the different methods used to drill holes as nearly straight as possible. The methods used in the Gulf Coast are similar to those used in the oil fields in other parts of the United States having similar formations.

The allowable total deviation from the vertical in wells on the flanks of salt domes is governed principally by the width of the producing zone. Wells that make an average deviation of 4° are generally considered crooked and a few operators endeavor to keep their wells within a 2° average.

The following list includes most of the methods generally used to drill straight holes:

1. Control of the weight applied to the bit.
2. Various types of reamers and guides used to keep the drill stem in the center of the hole for the first 100 feet above the bottom.
3. Use of large size drill pipe near the bottom to stiffen and give added weight to the drilling string near the bit.
4. Selection of different types of bits adaptable to the formations encountered at various depths.
5. Regulation of mud pump pressures.

Correcting Holes

The main purpose of drilling is to reach a productive sand rather than to drill a straight hole. The position and width of the oil zone can usually be determined in producing areas by the surveys of nearby wells. Then if the survey shows a well to be crooked, particularly while yet at a shallow depth, it should be straightened if the crook is very large, or if it is in such a direction that the well would miss the productive sands. On the other hand, if the hole is only moderately crooked, and its direction is such that it will likely reach the sand in a productive position, drilling should be continued without redrilling the hole to correct it.

Assuming a dome with flank production from a single sand body 300 feet wide with wells 5,000 feet deep, it will be seen that a well whose starting point at the surface is directly over the middle of the pay zone, would miss production by 190 feet if the well goes directly away from the dome at an average angle of 4°. On the other hand, if it goes directly toward the dome by the same angle, it would probably hit the intrusive salt body. If this same well, however, were to go directly along the periphery of the dome in either a clockwise or counter-clockwise direction, considered from the center of the dome, it would hit the sand at a productive level.

In correcting holes, several types of problems are found. The most frequent problem is to straighten an uncased hole which is either very crooked or which, while only moderately crooked, would miss the producing horizon on account of the unfavorable direction in which the hole is going. The usual method is to

(Continued on Page 157)

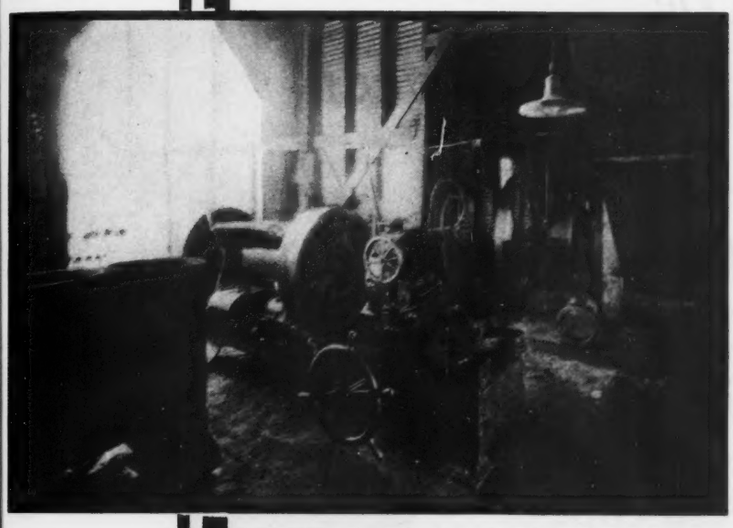
[1]Assistant to the president, Humphreys Corp.

[2]Chief geologist, Humphreys Corp.

*Published in The Oil and Gas Journal by courtesy of the bulletin of the American Association of Petroleum Geologists. Paper delivered at New Orleans meeting of the A.A.P.G., March 21, 1930.

[3]A.A.P.G. Volume XIII, page 1,095.

In the shop or on the job



Fenberg Pipe & Supply Co., Lefors, Texas

you can get better pipe threads at lower cost with a B & K machine.

OUT in the oil field doing the rough and tumble of fast erection work where speed is the rule of the day and sure results are the only thing that counts, there you will find Bignall & Keeler Threading equipment the first choice.

And in pipe shops where performance on steady grind is the thing that counts, where costs must be cut to the bone, there again you will find Bignall & Keeler machines the first choice.

Bignall & Keeler Threading equipment has the knack of grinding out work at a profit, the knack of taking the jobs just as they come and getting them done on time.

Let us send you our catalog. One of the 17 different types of B & K machines is certain to fit your need.

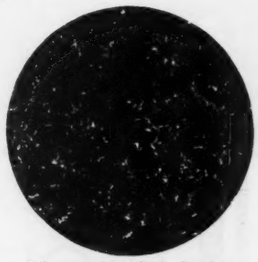
PEERLESS B&K DUPLEX D.D.G.C

Bignall & Keeler
Machine Works
of the N. O. Nelson Mfg. Co.
Edwardsville, Ill.

O&GJ 3-27 Gray

The "Inside Difference" between JONES *fully normalized, high manganese steel* SUCKER RODS and ordinary rods, as revealed by the microscope

Under the microscope, most sucker rods show a highly varying grain structure.



Micrograph of the body of an ordinary rod. Compare this with the one below.

Pictures tell the story and here's the "Jones" story in full.

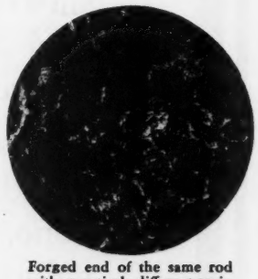
An ordinary sucker rod, under the microscope, shows an utter lack of uniform grain structure,—different parts of the same rod are revealed as having an entirely different metallurgical nature . . . Therein lies the secret of the superiority of Jones High Manganese Steel Sucker Rods.

Any Jones Rod, put to the microscope test, will show a perfect, uniform grain structure from end to end,—hence their high fatigue resistance, lack of heat demarcation and unequalled record of satisfactory performance.

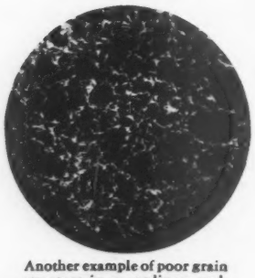
Jones Fully Normalized High Manganese Rods are the *only* sucker rods that are manufactured under full heat treatment,—the entire length of each rod is heat treated at the same time, under uniform temperature, in the world's largest sucker rod normalizing furnace . . . They are the *only* rods that can pass the uniform grain structure test,—Therefore, they are the *best* rods to use.

Write for the booklet describing this super sucker rod,—every oil man should have it.

Cross-section of the metal structure of an ordinary rod. Note the difference from that above.

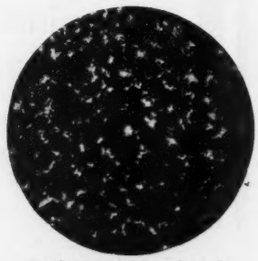


Forged end of the same rod with an entirely different grain structure. Note the enlarged crystals.



Another example of poor grain structure in an ordinary rod.

Compare the others with this cut. Here is the "Jones" High Manganese Rod—it shows the same, even, close grained structure throughout the rod, indicative of its strength and high fatigue resistance.



Ready-for service end of the same rod with a different grain structure from either of the above parts.

THE S. M. JONES COMPANY · TOLEDO, OHIO

Mid-Continent Office: McBirney Bldg., Tulsa, Okla.

ursday

ROCKY MOUNTAIN AREA

(Continued from Page 60)

F. B. Van Horn's No. 1 Santa Fe, SE SE, Section 18-19-26, is bottomed at 1,065 and fishing for tools. R. D. Compton's No. 1 State, NW cor., Section 2-20-25, is drilling at 1,015 feet in lime.

Artesia Area

Flynn, Welch & Yates' No. 57 State, NE cor. SE, Section 19-19-28, is drilling at 3,235 feet in gray lime. It had an oil show at 3,055 feet.

UTAH

The Midwest Refining Co.'s No. 31 Pary, SW SE, Section 14-39s-1w, Kane County, Utah, for the account of the Utah Oil Refining Co., is drilling at 2,580 feet. This well is nearing its first objective, the Shinarump conglomerate, which is expected at approximately 2,700 feet. The Utah Southern Oil Co.'s No. 1 State, SW SE, Section 26-21-23, Grand County, is drilling at 775 feet in brown McElmo shale. The top of the Pennsylvanian is expected at 2,200 feet.

IDAHO

The Grand Teton Oil Co.'s No. 1 Blevins, SW SE, Section 33-5n-44, Horseshoe structure, Teton County, Idaho, is drilling in a dry hole at 2,140 feet, and the same company's No. 1 Bevan, Section 28-5n-44, is drilling below 1,610 feet. The Moneida Oil Co.'s No. 1 Rose, Section 32-14-36, Clark County, is preparing to resume at 1,140 feet.

COLORADO

The Florence-Canon City district in Fremont County, Colorado, in which is located the Florence Pool, credited with being the second oldest producing field in the country, is receiving renewed attention on account of the drilling of sand tests both on the north and south of the productive territory. The Florence oil, it will be recalled, all comes from the shale and wells drilled to the Dakota in the field proper have yielded water. The pool is in a synclinal basin and the source of the oil in the shale has never been definitely established. P. W. Harr, of Denver, and associates, are drilling a structural test on the Chandler Dome, 5 miles south of Canon City and 3 miles south of the nearest producer in Hell's Half Acre, in their No. 1 Gindro, NE SW, Section 27-19-70. The uplift here brings the Dakota nearer the surface and in this test it was encountered at 340 feet. The drill passed out of the Lakota at 600 feet and is now in the top of the Morrison formation at 650 feet. The Dakota and Lakota both had some water but not in quantities large enough to make the well flow. These sands come to the surface to the west near the mountains and any oil which might have found its way into these horizons undoubtedly was flushed out and no production was expected. However, the underlying Morrison and Sundance sands do not outcrop and are sufficiently deep to make a reservoir. A fault cuts through the structure on the east and the Morrison is recognized as the source of an oil seep near Hardscrabble and another north of Canon City which have been known for many years. The operators have worked out a closure of 900 feet for the structure and plan to test the Morrison and Sundance and probably the Pennsylvanian, the latter being expected at 1,900 to 2,000 feet. Oil seeps from which oil is bailed out in buckets are found in several of the coal mines in the Chandler district, coming from the shales cut in the mining operations.

On the northern side of this area, the Continental Oil Co.'s No. 2 Harding, NE NW, Section 21-18-70, for the account of the Canon Heights Oil Co., also is intended as a test to the sands in the Orchard Park district. It is drilling at 2,350 feet and is expected to reach the objectives within 3,000 feet.

In the older area, the Warner-Mosher Drilling Co.'s No. 1 Adamic, SE SW, Section 1-19-70, is showing some oil at 2,800 feet, but has had trouble in running tubing and making a test. M. L. Eno's No. 2 Griffith, NW NE, Section 5-20-69, is drilling at 1,200 feet, and P. W. Harr's No. 1 Dia Giacomo, NE cor., Section 11-19-70, is showing oil and gas at 2,265 feet, total depth, and is cleaning out to tube and test.

Huerfano County

The Parker Club, Inc.'s No. 1 Fee, Section 4-28s-68, joint with the Kinney-Coastal Oil Co., is bottomed in a shale break between the Dakota and Lakota at 4,096 feet and is waiting for orders.

Bent County

The Continental Oil Co.'s No. 1 Pipe Springs, NE SE, Section 27-27-49, is drilling in gray shale at 5,640 feet. The 5¼-inch is being carried.

Lincoln County

The Kelly Oil Co.'s No. 1 State, SE NW, Section 36-14-57, which has had several small shows of oil and gas in shale, is drilling again after being idle for the winter. It is making hole at 3,255 feet in lime and shale and expecting the Dakota within the next 50 to 60 feet.

Arapahoe County

The McDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, is bottomed at 5,090 feet and sidetracking the 6¼-inch at 4,690 feet. The string parted at 3,990 feet.

Weld County

The Platte Valley Petroleum Co.'s No. 1 Patterson, SW SW, Section 24-6n-61, on the Greasewood Dome, which had been drilling since 1926 and which is rated as an important wildcat, is making fairly good progress on its last lap. It is drilling at 5,025 feet in black shale and carrying the 4¾-inch. The well is reported logging very closely with the wells on the Wellington Dome in Larimer County and the Dakota is expected at 5,200 to 5,300 feet.

Larimer County

The Continental Oil Co.'s No. 5 Scott, NE NW, Section 6-9n-68, Wellington Dome, is bottomed at 3,410 feet and running the 8¼-inch casing.

Rio Blanco County

The White Eagle Oil & Refining Co.'s No. 1-A Fordham, NW SW, Section 9-2s-96, Piceance Creek, a test of the Green River formation, was deepened from 3,010 feet to 3,028 feet and the 8¼-inch was cemented on bottom. The gas which had been showing in the well for some time, increased at 3,010-28 feet and is reported to be much wetter than that encountered in the upper horizons. The hole is not yet in the big sand in the Green River formation which shows saturation at the outcrops and the gas is coming from a sandy shale formation, thin stringers of sand appearing in the shale. The Texas Production Co.'s No. 1 Potter, NE SW, Section 30-2n-96, White River, is bottomed at 5,888 feet and fishing for the 2½-inch drill pipe. It stopped at 5,868 feet to test a sand showing gas saturation, but which was not considered commercial.

Mesa County

The Argo Oil Co.'s No. 1 Peerless, NE cor., Section 23-8s-104, High Line structure, has completed underreaming the 8¼-inch and is preparing to cement the string at 2,710 feet. Total depth is 2,712 feet. This well topped the Frontier at 2,016 feet where it had a substantial show of oil. There also was a show of oil in sand at 2,690-2,705 feet. It will be carried on down to the Sundance.

Moffat County

Thomas McLaughlin and others' No. 1 Williams, NW SW, Section 2-3n-92, Iles district, is drilling in sandy shale at 4,490 feet and looks as if it is going into sand. The Sundance is the objective. The Midwest Refining Co.'s No. 19-SD Parkinson, SW NE, Section 22-4n-92, is drilling at 2,675 feet. The 10¾-inch was set at 2,664 feet. The same company's No. 24 Hannewalt, SE SE, Section 4-6n-92, Bell Rock, is bottomed at 1,810 feet and preparing to run the 13-inch. The Mountain Fuel Supply Co.'s No. 1 Lasher, NE NE, Section 25-12n-101, Bartram Dome, is drilling at 1,876 feet, and the Texas Production Co.'s No. 1 Berlin, SW NE, Section 19-12-100, is jarring on the 6¼-inch.

WYOMING

Salt Creek

The Midwest Refining Co.'s No. 29-DT, NW, Section 35-40-79, on Wyoming Associated lease in Salt Creek, is 200 feet in the Tensleep at 3,980 feet and continued to improve with depth. At last reports it was flowing 1,850 bbls. per day and showed no water. With production in the upper horizons which was cased off to make the deep test, the well is capable of making around 5,000 bbls. a day flush production. It still has the Amsden, Madison and Deadwood horizons below the bottom of the hole remaining to be tested. The discovery in the Tensleep in this well is not only beneficial to the Salt Creek Producers and Mountain Producers Corp., but to other companies with holdings in Salt Creek. The Consolidated Royalty Oil Co. and the Western Exploration Co., while not holding any royalty interest in the particular tract upon which the deep test is located, have substantial interests in and practically own all the sections surrounding the test. The Consolidated Royalty and Western Exploration companies are controlled by the Brooks and Richardson families. Former Governor B. B. Brooks is president of Consolidated Royalty, and C. B. Richardson, a prominent banker, is at the head of Western Exploration.

Mahoney Dome

The Producers & Refiners Corp.'s No. 2, SE NW, Section 34-26-88, Mahoney Dome, Carbon County, joint with the Midwest Refining Co., which has proven the Tensleep horizon for production on that structure, stopped drilling at 4,683 feet, 83 feet in the Tensleep, to run tubing and make a pumping test. The 6¼-inch is cemented at 4,585 feet. The oil had risen 3,800 feet in the hole when it was decided to make a test. It pumped 75 bbls. the first 24 hours and 12 bbls. in the second 24 hours. This was not a satisfactory test as the hole sanded up very quickly, and it will be necessary to clean out and do some more work before it can be determined definitely what it will do. The oil has a mixed base and tested 32.2 gravity. It has a gasoline content of 17 per cent and is of a desirable grade for refining.

Park County

The Ohio Oil Co.'s No. 1 Burlington, SW SE SW, Section 21-53-101, on the Shoshone Dome near Cody, was put on the pump at a total depth of 4,500 feet and while a sustained test has not been made, it looks as if the well is good for 100 bbls. from the Embar formation. This is the second well drilled on the structure. The discovery well, three-fourths of a mile to the east, ran into hot sulphur water 18 feet in the pay and had to be plugged back. No. 1 Burlington topped the Embar at 4,312 feet, where the 8⅝-inch was set. The hole is sufficiently large to go down to the Tensleep, in which the big pay is found at Oregon Basin, if conditions warrant deeper drilling. On the Frannie Dome, the Midwest Refining Co.'s No. 31 Frannie Oil, SW cor. NE, Section 25-38-98, is fishing for tools at 1,635 feet. This well formerly was carried as No. 31 Rosenberg, but to differentiate it from another of the same number and name, it will be carried in the name of the company for which it is being drilled. No. 31 Rosenberg, SW cor. SE, Section 24-48-98, half a mile to the northeast of the No. 31 Frannie Oil, is spudding at 60 feet. In the Oregon Basin Field, the Texas Production Co.'s No. 2 Sonners, C SE SW, Section 20-51-100, is building rig. It is between producing wells.

Hot Springs County

The Ohio Oil Co.'s No. 1 Smith, SE NE, Section 9-46-99, Walker Dome, is drilling at 3,480 feet.

Big Horn County

The Ohio Oil Co.'s No. 1 Union Gas, NE cor., Section 22-56-97, is drilling at 4,721 feet.

Weston County

The Illinois Pipe Line Co. is preparing to construct about 4 miles of 3-inch and 4-inch pipe in the Osage Field to take care of new production. The Osage Trust Co.'s well in the NE SE, Section 14-46-64, which came in recently flowing 800 bbls. the first 20 hours, is still making 400 bbls. a day through a choker. It is 5 feet in the sand at a total depth of 1,612 feet, and preparations are under way to drill deeper. The Wyomont Oil Co.'s No. 1 State, NE SE, Section 10-46-64, is drilling at 1,000 feet. It had a show of gas at 900 feet. This well is intended as a deep test and will go to around 2,000 feet. It is approximately a mile northwest of the big well.

Fremont County

The Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte, is drilling in shale at 3,484 feet and carrying the 6¼-inch. The gas from the Muddy which broke through after the 8¼-inch was cemented at 3,390 feet, has been mudded off. The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, cemented the 10¾-inch on bottom at 3,010 feet and is waiting. The Producers & Refiners' No. 10, Section 14-32-95, Sand Draw, which is intended as a deep test to horizons below the Frontier gas, is rigging up.

Sweetwater County

The Mountain Fuel Supply Co.'s No. 1 Union Pacific, Section 11-17-104, South Baxter Basin, is bottomed at 2,567 feet and killing a flow of 7,000,000 feet per day of gas from the Dakota to drill on down to the Sundance. Same company's No. 1 Sullivan, SW SW, Section 10-16-104, is redrilling at 3,385 feet. The Prairie Oil & Gas Co.'s No. 75-A, Section 11-26-90, Little Lost Soldier, is standardizing at 2,376 feet. This well is expected to test the Tensleep.

Rocky Mountain Production

Daily average pipe line runs from the various pools in the Rocky Mountain area for the week ending March 22:

WYOMING	
Salt Creek	29,670
Frannie	400
Big Muddy	2,100
Oregon Basin	4,850
Dutton	...
Elk Basin	680
Ferris	40
Grass Creek	2,070
Hamilton	680
LaBarge	2,270
Lance Creek	180
Lost Soldier	3,310
Osage	670
o son Spitler	660
Rock River	2,270
Rex Lake	...
Lander	410
Simpson Ridge	...
Teapot Dome	20
Greybull	...
Total	50,280
MONTANA	
Cat Creek	1,200
Kevin-Sunburst	4,840
Pondera	2,040
Lake Basin	70
Total	8,250
COLORADO	
Moffat	991
Fort Collins	1,445
Florence	628
Iles	870
Tow Creek	398
Boulder	25
Rangley	50
Total	4,407
NEW MEXICO	
Hogback	460
Rattlesnake	1,088
Table Mesa	112
Artesia	796
Cap Rock (Maljamar)	856
Jal	1,353
Hobbs High	20
Getty	...
Lea	5,905
Miscellaneous (Lea County)	1,071
Total	11,661
Grand total	74,598
Grand total March 15	74,833
Difference	235

MONTANA

The new Border Field in Toole County now appears to have two productive sands around 2,500 feet. The Cosmos well that came in last week found the first sand at 2,483 feet and a showing of oil. This is the sand that the Vanalta No. 1 has its production from. Then the Cosmos well drilled on down and found another pay at 2,550 feet and is at present being tested here.

This theory of two productive sands will explain the seeming discrepancies that are noticeable in trying to compare the logs of the wells in the new field. Wells were reported higher structurally than others and later showed that the first information was wrong and that the well in question was really lower.

The Cosmos well appears good for a settled production around 60 bbls. per day and the Monalta No. 2 on an adjoining lease is the next completion in

the new field according to the present outlook. This well is having some casing trouble at 2,300 feet but expects to set the string shortly and then drill into the sand.

On the Canadian side of the line, the Vanalta No. 2 is also making about 60 bbls. daily and the Vanalta No. 3 is located and equipment is going in. Spooner Oils, Ltd., and the British Dominion Co. are preparing to start new wells on the Canadian side. The Mid-Continent is ready to run casing on the American side of the line and two new locations have been made for new wells.

In the Sunburst Field in Toole County, the Levnick No. 3, reported a completion last week, is making about 15 bbls. on the pump. The Texas Pacific deep test hit a gas flow that blew the tools up in the well and made a nasty fishing job. The hole is now at 3,125 feet. Seven wells are rigging up in the Sunburst Field to start drilling but these are all inside the known development areas.

The Sunburst Oil & Refining Co. is starting a well on the Bears Den Dome in the Sweetgrass Hills. This well is a second test in the area where this company found a showing of oil last year in this structure.

PANHANDLE FIELDS

(Continued from Page 70)

1 Richardson was dry and abandoned at 1,250 feet. Fain-McGaha's No. 1 Helm was dry and abandoned at 1,510 feet. T. F. Hunter's No. 3 Kunkel had an initial production of 15 bbls. of oil and 20 bbls. of water at 1,159-70 feet. Lawson-Duke's No. 2 Young had an initial production of 160 bbls. at 1,393-1,405 feet. Panhandle Refining Co.'s No. 18 Prideaux had an initial production of 14½ bbls. after having been shot with 10 quarts at 653-55 feet. Its No. 2 Prideaux had an initial production of 22 bbls. at 657-61 feet. Perkins & Cullum's No. 2 Richardson had an initial production of 100 bbls. at 1,391-92 feet. Shell Petroleum Corp.'s No. 2 Duprest had an initial production of 58 bbls. at 1,438-48 feet. J. R. Williams' No. 4 Kunkel had an initial production of 76 bbls. at 1,414-21 feet.

Baylor County

Barnsdall Oil Co.'s No. 2 Portwood-left had an initial production of 122 bbls. at 1,402-06½ feet. Consolidated Oil Co.'s No. 12 Portwood had an initial production of 150 bbls. at 1,404-10 feet. Its No. 14 Portwood had an initial production of 175 bbls. at 1,383-1,408 feet. Grebin's No. 1 Genberg was dry and abandoned at 1,502 feet.

Cooke County

Fain-McGaha Oil Co.'s No. 1 Gaff was dry and abandoned at 1,604 feet.

Jack County

Brazos River Oil & Gas Co.'s No. 2 Keyser made 8,000,000 feet of gas and 18 bbls. of oil daily at 2,905-06 feet. L. C. Harper's No. 4 Ezell had an initial production of 40 bbls. at 3,198-3,206 feet.

Foard County

Shell Petroleum Corp. and others' No. 1 Ward was dry and abandoned at 2,175 feet.

Montague County

Barnsdall Oil Co.'s No. 4 Cunningham had an initial production of 25 bbls. at 905-14 feet. Bridwell Oil Co.'s No. 1 Dennis had an initial production of 209 bbls. at 1,730-47 feet.

Wilbarger County

Atlantic Oil Producing Co.'s No. 7 Sigler-Waggoner had an initial production of 144 bbls. at 2,661-85 feet. Bass, Dillard & Simms' No. 1 Waggoner was dry and abandoned at 2,206 feet. Bradstreet Co.'s No. 1 Waggoner was dry and abandoned at 2,021 feet. Bradstreet & Grisham's No. 2 Waggoner was dry and abandoned at 1,977 feet. Davis Oil Corp.'s No. 6 Waggoner had an initial production of 350 bbls. at 2,647-77 feet. Davis Oil Corp.'s No. 7 Waggoner had an initial production of 500 bbls. at 2,635-70 feet. Hi-Land Oil Co.'s No. 4 George had an initial production of 80 bbls. at 2,196-98 feet. The Texas Company's No. 374 Waggoner had an initial production of 6 bbls. at 993-1,003 feet. The Texas Company's No. 376 Waggoner had an initial production of 15 bbls. at 1,070-79 feet. Waggoner Refining Co.'s No. 10 Waggoner had an initial production of 100 bbls. at 2,658-70 feet. Zenith Oil Co.'s No. 3 George had an initial production of 300 bbls. at 2,178-96 feet.

Wichita County

M. Staniforth and others' No. 2 Crudup had an initial production of 120 bbls. at 1,807-16 feet. Arkansas Fuel Oil Co.'s No. 27 Kemp & Kempner had an initial production of 130 bbls. at 1,748-70½ feet. C. H. Clark and others' No. 1 Allengham was dry and abandoned at 1,785 feet. W. H. Hammon's No. 11 Mitchell was dry and abandoned at 1,822½ feet. Holcomb & Jones' No. 1 Obenhouse was dry and abandoned at 2,108 feet. Humble Oil & Refining Co.'s No. 22 Taylor had an initial production of 180 bbls. at 1,752-66 feet. Shappell Oil Co.'s No. 2 Waggoner Brothers was dry and abandoned at 1,924 feet. United Producers Co.'s No. 12 Hodges had an initial production of 115 bbls. at 1,752-67 feet.

Young County

Bratcher Oil Co.'s No. 1 McDonald was dry and abandoned at 760 feet. Consolidated and Kelleher's No. 1 Colley was dry and abandoned at 875 feet. W. R. Duke's No. 1 Foehr was dry and abandoned at 1,105 feet. W. L. Hawkins' No. 1 Gragg was dry and abandoned at 804 feet. Howard Petroleum Co.'s No. 2 Taach was dry and abandoned at 720 feet. Kliner and others' No. 1 Hardy was dry and abandoned at 706 feet. Panhandle Refining Co.'s No. 16 Prideaux had an initial production of 5 bbls. at 595-601 feet. Its No. 17 Prideaux was dry and abandoned at 676 feet. Perkins & Cullum's No. 6 Lemmond had an initial production of 106 bbls. at 725-31 feet. E. R. Riggs' No. 1 Jones was dry and abandoned at 950 feet. E. D. Willis' No. 1 Larmore was dry and abandoned at 702 feet. W. C. Young's No. 1 Lewis was dry and abandoned at 1,168 feet. Baker & Pardee's No. 3 Donnell had an initial production of 165 bbls. at 3,320-31 feet. Fultz & Kay's No. 2 Kisinger had an initial production of 320 bbls. daily at 2,502-29 feet. Shaw Oil Corp.'s No. 1-C Kisinger had an initial production of 185 bbls. at 2,506-47 feet.

RANGER COMPLETIONS

Week Ending March 22

Callahan County

Bateman and others' No. 1 Cutbirth was dry and abandoned at 1,517 feet. Guffey and others' No. 1 Steward was dry and abandoned at 1,025 feet. T. S. Holden's No. 3 Cavanaugh-B was shot with 38 quarts at 1,623-56 feet and had an initial production of 60 bbls. Humble Oil & Refining Co.'s No. 1 Jackson-G had an initial production of 9 bbls. coming from two different pays, 740-52 feet and 813-25 feet. Kleiner and others' No. 1 Gilliland was dry and abandoned at 875 feet. W. G. Sawyer's No. 1 Snyder was dry and abandoned at 959 feet.

Coleman County

Gunn Production Co.'s No. 1 Kellar was dry and abandoned at a total depth of 373 feet. Atlantic Oil Producing Co.'s No. 1 Sampson was dry and abandoned at a total depth of 2,302 feet. Continental Oil Co.'s No. 15 Overall had an initial production of 400 bbls. at 2,169-84 feet. Evans and others' No. 1 Stewardson location was abandoned. Reeves & Riley's No. 1 Reede had an initial production of 3 bbls. after having been shot with 30 quarts at a total depth of 822-48 feet.

Brown County

Anna B. Gordon's No. 7-A Cannon location was abandoned. G. Metcalf's No. 1 Jones was dry and abandoned at 1,353 feet. Arcadia Refining Co.'s No. 1 Davis was dry and abandoned at 562 feet. Baker Brothers' No. 1 Gates was dry and abandoned at 625 feet. George McClung's No. 2 Smith had an initial production of 5 bbls. at 1,598-1,785 feet.

Eastland County

Lone Star Gas Co.'s No. 2 Calvert was drilled to a total depth of 3,350 feet, plugged back to 3,135 feet, was shot with 40 quarts at 3,107-23 feet and had an initial production of 240,000 feet of gas. Morris Brothers' No. 1 Williams was dry and abandoned at 1,765 feet. Arab Gasoline Co.'s No. 1 Brunett was dry and abandoned at 2,055 feet.

Erath County

Fletcher & Moore's No. 2 Cage & Mulloy was drilled to a total depth of 3,400 feet, was plugged back to 3,252 feet, shot with 30 quarts at 3,180-92 feet and had an initial production of 1,216,000 feet of gas.

Shackelford County

Cranfill & Reynolds' No. 4 Mathews was dry and abandoned at 1,275 feet. Deicker and others' No. 2 Mathews was dry and abandoned at 1,010 feet. Gilman & McMurray's No. 1 Jeter had an initial production of 15 bbls. of oil and 3,000,000 feet of gas at 892-99 feet. L. D. Hill's No. 1 Walker made 50,000 feet of gas at 210-12 feet. States Oil Corp.'s No. 1 Farmer was dry and abandoned at 1,664 feet.

Stephens County

Alworth and others' No. 1 Moore had an initial production of 2,750,000 feet of gas at 1,185-90 feet with 150 pounds rock pressure. Arrowhead Oil Co.'s No. 5 Post made 50,000 feet of gas at 1,915-25 feet. Texas Pacific Coal & Oil Co.'s No. 1 Coody had an initial production of 23 bbls. after having been shot with 20 quarts at 1,910-30 feet.

REMARKABLE CAREER OF JAMES M. GUFFEY

(Continued from Page 42)

ington-Allegheny Counties, Pennsylvania. Mr. Guffey and his associate drilled the famous Matthews gusher, which produced an average of 10,000 bbls. of oil per day and at one time he and his partner had a production in that pool of 50,000 bbls. per day, a tremendous production for any company or firm in that or any other day.

Following up his development work in the McDonald Field, he became interested in the natural gas production and distribution and in the course of years he organized and headed companies that involved the investment and expenditure of hundreds of millions of dollars in drilling for gas and distributing it through western Pennsylvania, Ohio and Indiana. Pittsburgh, Johnstown, Wheeling, Indianapolis and other large and many small towns in the several states burned gas produced on Guffey properties.

Neither James M. Guffey nor his partner was among those who believed that oil and gas deposits were confined to any one or several states. He was optimistic enough to believe that oil and gas had been pretty well distributed through the United States and it was natural that he should look westward.

Opened California Pool

With production and drilling operations in widely scattered places in the Pennsylvania and West Virginia fields, Guffey & Galey began seeking new worlds to conquer and looking clear across the continent they decided to try their fortunes in California. The firm drilled the first two wells in the Coalinga Field in 1892. The physical conditions met with in California drilling operations were so different to those in the Eastern fields that the firm withdrew from California and left an area that in productivity now ranks third in total production in the United States, outranking such great old fields as Cushing, in Oklahoma, and Bradford, in Pennsylvania.

The firm of Guffey & Galey had by this time become universally known in the oil regions east of the big river and well known on the Pacific Coast, and in the early nineties it made itself known in Kansas by the opening of the first commercial oil pool in that State, near Neodesha. Guffey & Galey drilled a host of wells in eastern Kansas and built a pipe line, but they disposed of their Kansas holdings consisting of production and 243,000 acres of proven and semiproven leases in eastern Kansas counties to the Forest Oil Co., a Standard Oil Co. subsidiary which later became the Prairie Oil & Gas Co. The Forest Oil Co. had no production or leases in the Mid-Continent Field until it purchased the Guffey & Galey holdings and this property may be said to have marked the beginning of the present Prairie Oil & Gas Co., one of the largest producing companies in the United States.

Guffey & Galey owned about 1,500,000 acres of wildcat leases in Kansas, but they never developed them, disposing of a part and allowing the others to lapse. The firm went down into Indian Territory and operated around Muskogee and Red Fork, near Tulsa, but their next important strike in the western fields was the opening of the Corsicana, Texas, Field, in 1895. This was a shallow area and not very prolific and the firm sold its properties to the Corsicana Petroleum Co., which later became the Magnolia Petroleum Co., now one of the largest producers in Oklahoma and Texas.

Largest Producers in Osage Nation

Guffey & Galey, in 1900, took over 186,000 acres of the famous Foster blanket lease on the Osage Nation in Indian Territory, most of the acreage being in what has since been known as the Avant Field. They were at one time the largest producers in Osage County, but when the Interior Department threatened to cancel the blanket lease Guffey & Galey sold out to T. N. Barnsdall for $1,250,000.

While operating in the Osage Nation, Guffey & Galey acquired valuable natural gas leases which they developed, and the first gas piped to Tulsa came from their properties. The late Gus Springer of Tulsa, of the firm of Kennedy & Springer, who opened the Hominy Field in Osage County in later years and sold out their holdings for $14,000,000 to the Tidal Oil Co., Sinclair Gulf Oil Co. and Osage Hominy Oil Co., was production superintendent for Guffey & Galey in their Osage operations.

Opening of Spindletop

Guffey & Galey turned their attention to the Gulf Coast Field about the same time they acquired the Osage properties and drilled the first well in Spindletop, known sometimes as the Lucas gusher. The well started at about 80,000 bbls. a day and was one of the wonder wells of America. The firm organized the J. M. Guffey Petroleum Co. with a capitalization of $15,000,000, and built the first pipe line and first refinery in the South Texas region. They were forced to dispose of this property in later years and it was acquired by the Gulf Oil Corp., and thus another large Mid-Continent concern, the Gulf Production Co. and the Gulf Refining Co. were born out of the holdings of this remarkable pair of pioneers.

Misfortunes in Mining

It has been the history of many successful oil men, that turning from oil to mining they have lost their fortunes. They knew the oil business, but mining was another man's game and they could not play it.

It was so with James M. Guffey. He invested heavily in mining operations in Colorado, Idaho, Florida and Nova Scotia. Some of these paid their way for awhile. He was also heavily interested in real estate in Pittsburgh, and became a director in the Columbia National Bank of Pittsburgh and in other local financial institutions. The panic of 1907 hit Mr. Guffey hard. He had sold many valuable properties, oil and otherwise to invest in coal lands in the Pennsylvania region. They were remote from a market and a railroad was necessary. The railroad was the last straw, and after a heartbreaking effort to put the big project over the property fell into other hands.

John H. Galey was in Alaska at this time, busy on mining ventures, and when he returned to the United States he stood by his partner loyally, so loyally, in fact, that his own holdings, which rated him as a multimillionaire, went the way of his friend and associate. Both died relatively poor men.

Guffey in Politics

James M. Guffey's interest outside of business was in politics on a large scale. He was not an office seeker, but he liked being on the inside of the organization and his wealth, of which he gave freely to his party, helped to give him

IF YOU WANT TO STEP-UP

PROFITS

CALL IN THE G.T.M.

Sharp as is his eye for costs, the G. T. M.—Goodyear Technical Man—has also a shrewd regard for profits. He is a rubber expert, long adept in the specification of Mechanical Rubber Goods to the needs of manufacturing industry. With increased profit always in view, with knowledge, skill, and energy, he drives home his tested economies. He knows how to transmit power, move materials, air and liquids, swiftly and smoothly through your plant. He reduces delay, he speeds schedules, he avoids waste. Many businesses similar to yours have profited by his practiced counsel. Your job is his job; his economies, your profits.

In the oil fields, in refineries, in distribution of oil products, the G. T. M. has an outstanding record. He has specified Goodyear Compass Oil Well Belts and Goodyear High-Pressure Rotary Hose to slash drilling costs. He has supplied Goodyear Oil Suction and Discharge Hose for economy on tankers and pumps. Thousands of feet of staunch Goodyear Hose are in use on tank wagons and retail pumps. The G. T. M. knows the oil business and how to reduce its costs. He can save money for you now.

• • •

For complete data on the G. T. M. and his ability to help your business, write Goodyear, Akron, Ohio, or Los Angeles, California.

THE GREATEST NAME IN RUBBER

GOODYEAR

HOSE • BELTING • MOLDED GOODS • PACKING

hearty welcome. He turned down the nomination for governor of Pennsylvania on the Democratic ticket. The convention in 1898 would willingly have made Mr. Guffey its choice, but he declined in favor of George H. Jenks. Mr. Guffey was chosen as the party's leader in Pennsylvania and was a member of the National Committee from the Keystone State. He was an ardent admirer of William Jennings Bryan and freely contributed to Bryan's presidential campaigns.

The declining years of his life were spent quietly in his home in Pittsburgh. He made no effort to "come back" in the oil business. He was tired of the hurly burly of modern big business life and he was temperamentally unfitted to do business on a small scale. It was tragic that such a man, in fact that such a pair of men as James M. Guffey and John H. Galey, should not have been able to retain at least a part of the wealth their pioneering efforts had unearthed.

GRAVIMETRIC METHOD AND TORSION BALANCE

(Continued from Page 41)

called lines of the vertical, will in general not be straight, but will be curved slightly into and toward the heavier masses and around and away from the lighter masses. Surfaces which are everywhere prependicular to the lines of the vertical, called level of equipotential surfaces, will not be simple spherical surfaces of large radius, but will be slightly warped, convexly upward over the heavier and concavely downward over the lighter areas.

The quantities measured by the Eotvos torsion balance are, (1) the horizontal gradient of gravity, i.e. the greatest rate of increase of the intensity of gravity in a horizontal plane, and (2) the differential curvature, which is a measure of the deviation of the level surface from a spherical form.

The Torsion Balance

The working system of the balance consists of a very fine wire suspended vertically and attached at its lower end to a freely swinging inverted T-beam, the horizontal member of which is several times the length of the vertical member. At one end of the horizontal member of the beam there is fastened a gold weight, and from the other end of this horizontal bar is suspended a similar gold weight. Because the lines of the vertical are in general slightly curved and the level surfaces slightly warped, there will be set up at each weight of the balance system a horizontal component of the force of gravity, which will be the vectorial sum of two components, one a measure of the gravity gradient and the other a measure of the differential curvature. The effect of these horizontal components of gravity acting on the weights is to exert a horizontal torque tending to rotate the balance beam and twist the upper torsion wire. The resistance of this wire to torsion opposes the rotation and the beam will eventually come to rest when the resistance of the wire is exactly equal to the horizontal torque. The resistance of the wire per angular unit of rotation and the moment of inertia of the beam system are carefully determined by the makers in the laboratory, and with these quantities known the unknown horizontal torque acting on the system can be calculated if the angular rotation which it causes can be measured. This angular rotation, which is usually only a small fraction of a degree, is measured accurately by means of a mirror attached to the vertical member of the swinging beam, which reflects light from a fixed scale through a telescope attached to the outside of the instrument.

The values of the gravity gradient and differential curvature can be calculated if measurements of the rotation of the balance beam are made in several different azimuths of this beam. With an instrument having but one such balance system five readings in five different azimuths are necessary to completely calculate the gravity gradient and differential curvature effects at any one observation station, but with the modern double balance instrument, which has two parallel balance systems oriented at an angle of 180 degrees to each other, readings in three positions only are necessary. The first two positions are usually repeated, however, making five readings in all, to insure greater accuracy. It takes about 50 minutes for the balances to come to rest in each position; it takes therefore a little over four hours to complete a set of observations at any one observation station.

The first torsion balances designed by Eotvos were constructed under his supervision by the firm of Ferdinand Suss, of Budapest. Experimental surveys were made with them in Hungary, which proved the practicability of the method. Eotvos published the results of these surveys and then devoted the rest of his life to improving the instruments.

Institute Founded

Following the death of Eotvos in 1919 the Baron Roland Eotvos Geophysical Institute was founded to carry on the scientific work begun by him. The research work done by this institute both in laboratory and field, under the direction of Dr. D. Pekar, member of the Hungarian Academy of Sciences and colleague of Eotvos in his original work, has resulted in the constant improvement of the torsion balances manufactured in Hungary. All of these Hungarian instruments are manufactured by the firm of Ferdinand Suss and are built according to specifications given by the Geophysical Institute and are calibrated and tested there under the direction of Dr. Pekar before delivery. As a result of this research work and the technical supervision in the manufacture of the instruments it has been possible to perfect new models, exactly the same in every essential respect as the originals of Eotvos, and having practically the same sensitivity and accuracy, but much smaller, lighter, and therefore more quickly and easily handled in the field.

All of the original Eotvos torsion balances have been, up to the present, visual instruments, i.e. an observer had to record the readings of the balances in one azimuth, then turn the instrument into the next azimuth, leave it and wait until the balance beam had had time to come to rest, then repeat this procedure until the required number of readings had been taken. Eotvos had experimented with a device which recorded the readings on a photographic plate and, after recording, automatically turned the balance into the next azimuth. He felt, however, that automatic registration was not as accurate and reliable as visual observation, and that the complicated automatic mechanism was much more difficult to handle in the field than the simple visual instrument. While only visual instruments were being manufactured and sold, Dr. Stephen Rybar, former assistant of Eotvos and now director of the Physical Institute of the University of Budapest, was perfecting an automatic device which was as simple as such a mechanism could be, and yet was perfectly reliable and accurate.

An instrument with this automatic registration device, called the Eotvos-Rybar torsion balance, has just been put on the market. Extremely sensitive torsion wires, having a diameter of only 0.01 mm., permit a further reduction in size without lowering the accuracy, and also reduce the total time necessary to complete a set of observations to less than three and a half hours. With the automatic attachment this instrument can be set up quickly and requires not more attention from the observer until the series of readings is completed. A unique feature of this instrument is that the automatic mechanism can be entirely removed and the instrument converted into a visual type whenever desired. Several of these automatic instruments are now being tested in this country, and results so far indicate that they are extremely accurate and reliable, and on account of their small weight and size and the increased speed with which they can be prorated, particularly adapted to commercial field surveys.

Operation in Field

The operation of the Eotvos torsion balance in the field has been reduced by improvements in the field technique to the utmost simplicity. A station site is chosen in a place as level as possible, for a distance of 50 to 100 yards out from the station center. Slight surface irregularities are smoothed off of the station site out to a radius of about five yards. Levels in eight radial directions are then taken from the station center out to 20, 50, 100 yards or further, depending on the nature of the immediate topography. This levelling is for the purpose of calculating the "terrain effect," i.e. the portion of the total gravitational disturbance due to nearby topographic irregularities. This must be applied as a correction to the observed results.

After the terrain levels have been taken an instrument is set up over the center of the station site. This house is used as a protection to the instrument against sudden weather changes. The house is made of a heat insulating material and protects the instrument against rapid changes of temperature, also rain and wind. The house is always oriented by compass in the same relative position on each station site.

The instrument is then assembled and set up in the center of the house. It is accurately levelled and oriented by compass, the first position being magnetic north. The balances are then released and the beams allowed to swing freely until they have come to rest. The reading is then taken and the instrument turned into the next position, and so on until the necessary number of readings has been taken. The instrument and house are then disassembled and moved to the next observation station.

The calculation of the values of the gravity gradient and differential curvature are then made. By using standard computation forms these calculations are reduced to simple arithmetic and can be quickly performed by any intelligent observer. The observed values must be corrected for the "terrain effect" mentioned above, and the "normal" gradient and differential curvature are due to the density irregularities in the subsurface formations. It is these values which the geophysicist uses in making his interpretations of them in terms of geological structure. The gravity anomalies are plotted graphically on maps and carefully studied. Certain types of geological structure, with certain density relationships between the various rock formations involved, will give more or less definite types of gravity anomalies. A geophysicist with wide experience in interpreting various types of gravity anomalies can recognize the type present, and by simple inspection of the plotted results, give much information of value as to the structure of the rock formations underlying the area surveyed.

Interpretation

Qualitative interpretation by inspection of plotted results only, while it may give general information of immediate value in any area, is often unsatisfactory and even dangerous unless supplemented by the quantitative interpretation of an expert geophysicist who understands the higher mathematics of interpretation and has had sufficient experience to realize the limitations of the method and the precautions necessary in the interpretation of certain types of structure. One of the greatest dangers in the use of the method is the attempt, often made, to get detailed interpretations from insufficient data. Very often the effect of a small local structure will be partially masked by a large regional effect, and unless the survey has covered a wide enough area to enable the interpreter to recognize and evaluate this regional effect, any attempt to interpret the gravity anomalies in the neighborhood of the local structure will be more or less in error. A skillful interpreter will get the maximum information out of the data at his disposal, but he will not attempt to get more information than the completeness of the data warrants.

The increasing success with which the Eotvos torsion balance has been used in recent years is due not only to improvement in the instruments themselves and in the technique of field operation, but also to recognition on the part of the most successful users that interpretation of results is a very specialized field and should be done by an experienced expert. The torsion balance is coming to be used more and more in areas of complicated geological structure. The problems of working out the relationship of gravity anomalies to structural conditions in these areas are complex, and require the highest grade of technique and experience in the interpretation of results. The recent introduction of the use of the torsion balance into California, particularly in the broad, flat San Joaquin Valley, where topographic conditions are especially favorable, has emphasized this. That the torsion balance can, and eventually will, throw much light on the subsurface structure of this great valley seems fairly certain. The degree of success attained by this method in this and similar areas will depend on (1) the accuracy and thoroughness of the field survey, and (2) the skill and experience applied to the interpretation of results.

CRANFILL-REYNOLDS CO. HOLDS ANNUAL ELECTION

HOUSTON, Tex., Mar. 24.—Following a meeting of stockholders of the Cranfill-Reynolds Co. at Dallas at which directors and officers for the ensuing year were elected, headquarters have been moved from Dallas to Houston where they have been established on the seventh floor of the Esperson Building.

Officers elected were O. R. Seagraves, chairman of the board; George S. Heyer, president; W. L. Moody, III., J. H. Reynolds, A. H. Richardson, and W. L. Goldston, Jr., vice presidents; W. L. Moody, III., treasurer; J. F. Trevitt, secretary; N. N. Oille and Joe S. Dean, assistant secretaries, and J. F. Trevitt, assistant treasurer. Directors chosen are O. R. Seagraves, W. L. Moody, III., J. R. Reynolds, George S. Heyer, Tom E. Cranfill, A. H. Richardson, C. A. Middleton, J. Edgar Pew and Palmer Bradley.

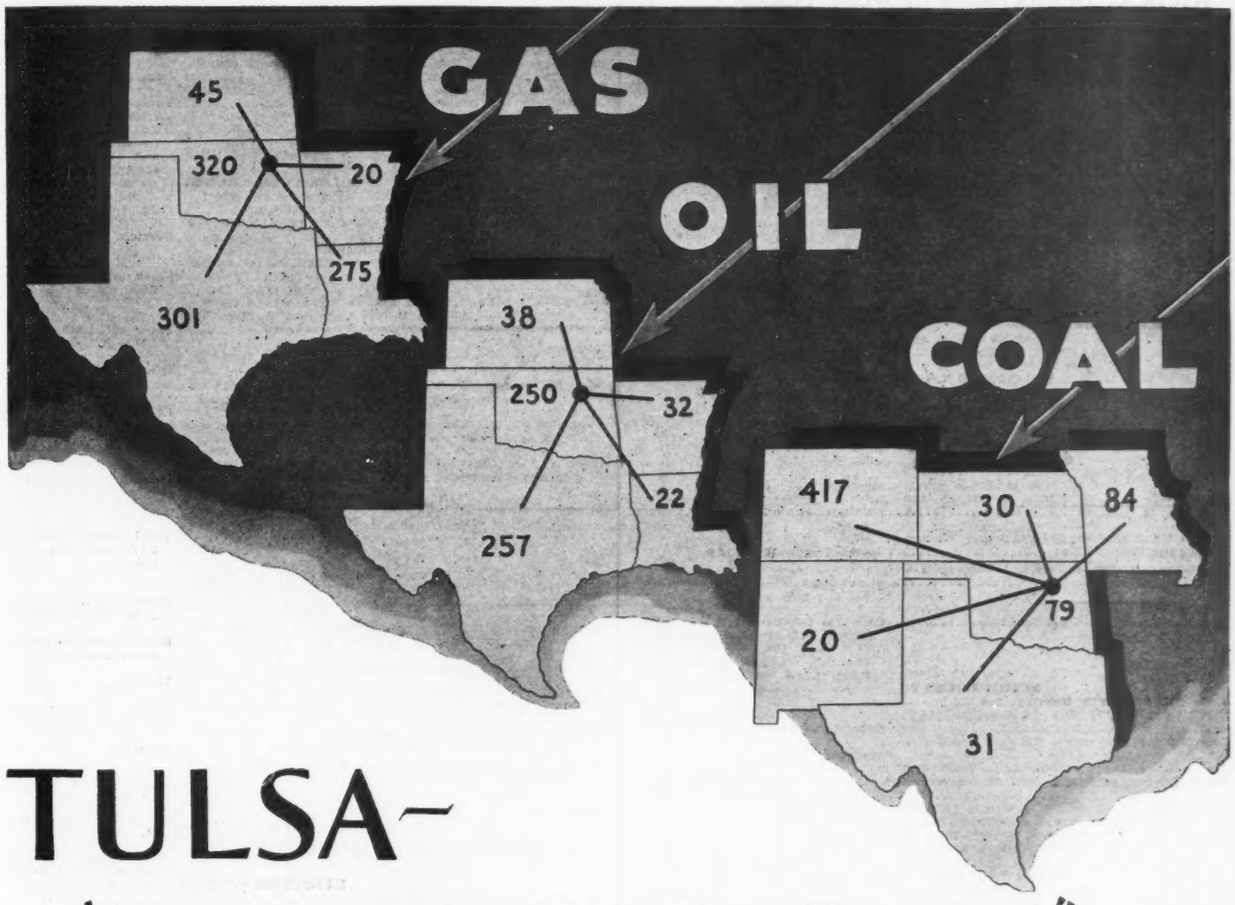
The Cranfill-Reynolds Co., of which the controlling stock is owned by the Moody-Seagraves interests of Houston, was organized several months ago through a merger of the producing properties and acreage of the Moody-Seagraves interests, the former Cranfill & Reynolds holdings, the Central Texas Refining Co. properties and certain other interests. The company's operations extend not only over Texas but into other areas and as far as Wyoming, including in the latter state the properties of the former Cody Petroleum Co.

M. A. HARDIE RESIGNS FROM HOUSTON GULF GAS

HOUSTON, Tex., Mar. 24.—M. A. Hardie, vice president and general manager of the Houston Gulf Gas Co. and the Dixie Gulf Gas Co., gas transportation subsidiaries of the United Gas Co., Houston, Tex., has resigned, effective at the close of this month. He has not made known his future connection but for the present will take a few weeks vacation. A permanent successor has not been chosen for him.

Mr. Hardie first came to Houston in 1928 as general manager of the Houston Gulf Gas Co., which operates a gas pipe line system extending from Southwest Texas fields to Houston. He was made a vice president of the company and later was chosen vice president and general manager of the Dixie Gulf Gas Co., a sister company, being in charge of the latter's gas system from Waskom, Northeast Texas, to the coast.

Previous to joining the Moody-Seagraves companies, Mr. Hardie had an extended experience in various gas production, gas pipe line and distribution companies in several parts of the country and Canada. He started oil field work in 1895 with the Carter Oil Co. in West Virginia, later going with the United Natural Gas Co. of Oil City, Pa., the Canadian Western Natural Gas, Light, Heat and Power Co., Ltd., of Alberta, Canada, and the Producers & Refiners Corp., Parco, Wyo.



TULSA—

"The World's FUEL Capital"

Long concerned, as the World's Oil Capital, in developing petroleum resources, Tulsa has herself only recently awakened to the fact that she stands pre-eminent in ALL the great fuels—is, in fact, by so tremendous a margin as to leave no room for argument whatever—*the leading fuel center of the entire world.*

This fact is highly significant. Considered in combination with Tulsa's other industrial advantages, her fine climate, and her central location—it suggests that Tulsa is destined to become an industrial center of mammoth proportions.

NATURAL GAS is the industrial fuel *par excellence.* The United States produces probably 95% of the world's present supply of natural gas. Oklahoma accounts for over 20% of this production, (chart indicates billions of cubic feet); and the five states shown produce 58% of the nation's total. Tulsa is by an overwhelming margin, the Gas Capital of the World.

PETROLEUM is the source of both Gasoline and Fuel Oils. The United States produces 70% of the world's petroleum. In *value* of oil produced (chart indicates millions of barrels) Oklahoma leads all states, and with the other states shown produces 67% of the nation's oil.

COAL is perhaps the greatest single asset of the United States, which contains over half of the entire world's coal reserves. If a state's importance as a coal center be measured by the combined reserves of itself and the bordering states, Oklahoma stands *second* in the nation as a coal center, being surpassed only by Wyoming, (chart indicates billions of tons). Oklahoma has a larger variety of high-grade coal than any other state but one, and at present national consumption figures could supply her forty-eighth of the nation's needs for 6,000 years. Tulsa lies at the *heart* of Oklahoma's coal deposits.

Three facts about Tulsa should be borne in mind by the manufacturer of oil field and refinery equipment: First, that Tulsa is today the leading manufacturing center for such equipment, with more than 300 manufacturers in these lines, thus has developed every facility for serving these industries; Second, that Tulsa is the world's leading market center for the *sale* of such equipment; Third, that Tulsa is the world's leading FUEL center and will always provide POWER, the basic need of industry, at lowest rates.

The Tulsa Industrial Finance Corporation, capitalized at $1,100,000, was recently organized to assist in financing worthy industrial enterprises.

Our new 80-page industrial survey will be sent to manufacturing and business executives without obligation. Simply attach the coupon to your letterhead and mail.

Send for this Book

INDUSTRIAL COMMISSIONER
Tulsa Chamber of Commerce
Dept. P, Tulsa, Oklahoma.

Please send me without obligation your new industrial survey of Tulsa.

NAME.....

FIRM.....

STREET.....

CITY..... STATE.....

TULSA

Logical Distributing Point for the Southwest—
Logical Manufacturing Center of the Nation

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 69)

Duffy et al's No. 1 Cowden et al, 660 ft. from S and W lines of Sec. 18, Blk. X, C.C.S.D.&R.G.N.G. Sur. ... Running 8¼-in. casing; total depth 1,930 ft.

Humble Oil & Ref. Co.'s No. 2-C University, 2,310 ft. N and 330 ft. W of SE cor., Sec. 40, Blk. 30, University Land ... Drlg. 1,510 ft.

Warner-Quinlan Co.'s No. 8 University, 990 ft. S and 330 ft. W of NE cor. of SW, Sec. 39, Blk. 30, University Land ... Drlg. 2,735 ft.

California Co.'s No. 2 Shannon, Lease No. 3, 258 ft. N and 2,997 ft. E of Sec. 42, T.C.R.R. Sur. ... Rigging up.

W. W. Donnelly's No. 1 Middle-Buster, Sec. 11, Blk. 9, D.&S.E.R.R. Sur. ... 6,000,000 ft. gas 1,662 ft.; shut down 1,755 ft.

Empire Gas & Fuel Co.'s No. 1 Shannon, 330 ft. N and E of Sec. 42, T.C.R.R. ... Top salt 1,130 ft.; top lime 2,468 ft.; top pay 2,615 ft.; total depth 2,660 ft.; plugged back to 2,640 ft.; pumped all water first **2 days.**

Lewis & Daniels' No. 1 Pecos River bed, 19 yds. S and 37° E of NW cor., Sec. 33, Blk. 1, I.&G.N. Sur. ... Shut down 1,407 ft.

Magnolia Pet. Co.'s No. 1 Hoover, 2,310 ft. from N and 330 ft. from E of Sec. 12, **Blk. 1, G.C.&S.F.R.R. Sur.**.. Top salt 660 ft.; show gas 1,858-1,950 ft.; drlg. **2,160 ft.**

Trans-Texas Oil Co.'s No. 2 Shannon, **983 ft. from E** and 1,873 ft. from E line of Sec. 42, T.C.R.R. Sur. ... Location.

CULBERSON COUNTY

Grisham & Hunter Oil Corp.'s **No. 1 Seay, 330 ft. from S** and W of Sec. 16, Blk. 59, Twp. 7, T.&P.R.R. Sur. ... Drlg. 3,233 ft.

Grisham & Hunter Corp.'s No. 1 Garren, 2,310 ft. from S and 330 ft. from E of Sec. 18, Blk. 89, P.S.L. Sur. ... Spudding.

Hickey & Stiver's No. 1 C. O. Finley, 600 ft. N and 1,980 ft. W. Sec. 20, Blk. 82 ... Small show oil **1,331 ft.**; drlg. 2,865 ft.

Kornrumpf et al's No. 1 Garren, **330 ft. S and W, Sec.** 15, Blk. 79, Public School Land ... **Spudded and shut down.**

West Coast Oil & Exploration Co.'s **No. 1 McGregor, C** NW, Sec. 14, Blk. 81 ... Slight show oil 740 ft.; shut down 875 ft.; may abandon.

Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E. Sec. 1, Blk. 97, Public School Land ... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; oil show 2,528 ft.; hole full sulphur water; running 6-in. casing; shut down **3,508 ft.**

ECTOR COUNTY

Cosden Oil Co.'s No. 1 Kloh & Rumsey, 990 ft. S and 330 ft. E NW cor., Sec. 17, Blk. 44, Twp. 3s, T.&P. Sur. ... **Drlg. 1,500 ft.**

Cosden Oil Co.'s No. 2-A University, NE cor. S half NE, Sec. 1, Blk. 35, University Land ... Spudding 200 ft.

Cosden Oil Co.'s No. 2 University-B, 2,310 ft. S and 440 ft. W of NE cor. of Sec. 2, Blk. 35, University Land ... Jarring on tools 830 ft.

C. P. Davis et al's No. 1 Hendricks, C SW Sec. 46, Blk. 42, Twp. 2s, T.&P.R.R. Sur. ... Drlg. 1,088 ft.

Gibson & Johnson's No. 1 Scharbauer, 990 ft. from N and E of Sec. 4, Blk. B-15, Public School Land ... Drlg. 625 ft.

Gulf Prod. Co.'s No. 1 Kloh-G, 330 ft. N and 440 ft. E of SW cor., Sec. 5, Blk. 44, Twp. 3s, T.&P. Sur. ... Drlg. 550 ft., red rock.

Gulf Prod. Co.'s No. 1 State, 330 ft. N and 440 ft. W of SE cor. of S 160 ac. of Sec. 1, Blk. 35, University Land ... Drlg. 2,700 ft., anhydrite.

Gulf Prod. Co.'s No. 1 State-A, 330 ft. S, 440 ft. W of NE cor. of N half of S half, Sec. 2, Blk. 35, University Land ... Drlg. 2,345 ft., anhydrite.

Humble Oil & Ref. Co.'s No. 2 Kloh-Rumsey-D, 2,310 ft. S and 440 ft. E of NW cor. of Sec. 7, Blk. 44, Twp. 3s, T.&P. Sur. ... Drlg. 3,383 ft.

Humble et al's No. 3 Kloh-D, 2,325 ft. N and 440 ft. E of SW cor., Sec. 7, Blk. 44, Twp. 3s ... Drlg. 2,835 ft.

Humble et al's No. 4 Kloh-D, 322 ft. N and 440 ft. E of SW cor., Sec. 7, Blk 44, Twp. 3s ... Drlg. 2,270 ft.

Humble Oil & Ref. Co.'s No. 5-D Kloh-Rumsey, 1,674 ft. S and 440 ft. E of NW cor., Sec. 7, Blk. 44, Twp. 3s, T.&P. Sur. ... Location.

Humble Oil & Ref. Co.'s No. 6-D Kloh-Rumsey, 1,014 ft. S and 440 ft. E of NW cor., Sec. 7, Blk. 44, Twp. 3s, T.&P. Sur. ... Location.

HumbleHumble Oil & Ref. Co.'s No. 7-D Kloh et al, 330 ft. from N and 440 ft. from W of Sec. 7, Twp. 3s, Blk. 44, T.&P. Sur ... Drlg. 320 ft.

Humble Oil & Ref. Co.'s No. 2 York, 990 ft. S and 440 ft. E of NW cor. of Sec. 16, Blk. 44, Twp. 3s, T.&P. Sur. ... Top lime 3,130 ft.; drlg. plug 3,343 ft.

Humble Oil & Ref. Co.'s No. 3 York, 1,650 ft. S and 440 ft. E of NW cor., Sec. 16, Blk. 44, Twp. 3s, T.&P. Sur. ... Reaming to cement 6-in. casing 3,412 ft.

Humble et al's No. 4 York, 323 ft. S and 440 ft. E of NW cor., Sec. 16, Blk. 44, Twp. 3s ... Drlg. 1,845 ft.

Humble et al's No. 5 York, 2,324 ft. S and 440 ft. E of NW cor., Sec. 16, Blk. 44, Twp. 3s ... Drlg. 2,225 ft.

Humble et al's No. 6 York, 2,991 ft. S and 440 ft. E of NW cor., Sec. 16, Blk. 44, Twp. 3s ... Drlg. 2,347 ft.

Independent Oil & Gas Co.'s No. 1 Eidson, 1,250 ft. S and 2,144 ft. E of NW cor., Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. ... Drlg. 445 ft.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M.M.Br.&A. Sur. ... Spudded and shut down 30 ft.

Landreth Prod. Corp.'s No. 1-A University, NE, Sec. 3, Blk. 35, 1100 ft. E of No. 1-T ... Spudding.

Landreth Prod. Corp.'s No. 2 University-S, 330 ft. S and 440 ft. W of NE cor. Sec. 2, Blk. 35, University Land ... Drlg. 2,950 ft.; top salt 1,210 ft.

Landreth Prod. Corp.'s No. 2-T University, 990 ft. from N and 330 ft. from E of Sec. 3, Blk. 35 ... Drlg. 3,688 ft.; produced 600 bbls. oil March 21.

T. P. Coal & Oil Co.'s No. 1 McKenzie, 1,650 ft. from S and 330 ft. from E of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. ... Building rig.

R. R. Penn et al's No. 1 Goodman et al, 2,640 ft. N and 330 ft. W of SE cor. Sec. 27, Blk. 44, T.&P.R.R. Sur... Location.

Simms Oil Co. et al's No. 1 University (was Landreth Prod. Corp.), 2,310 ft. N, 440 ft. W SE cor., Sec. 1, Blk. 35, University Land ... Drlg. 1,120 ft.

Skelly Oil Co. et al's No. 1 University-A, 990 ft. S and 440 ft. N of NE cor. Sec. 1, Blk. 35, University ... Drlg. 900 ft.

Skelly Oil Co.'s No. 2-A University, 330 ft. S and 440 ft. W of NE cor., Sec. 1, Blk. 35, University Land ... Building rig.

EL PASO COUNTY

Laytex's No. 1 Malone, 2,200 ft. SW and NW, Sec. 46, J. M. Day Sur. ... Shut down 1,481 ft.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlow, Sec. 60, V-8, J. C. Clift Sur. ... Shut down 3,000 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 1 Johnson, 440 ft. from N and 1,540 ft. from W of Sec. 3, Blk. R, Richardson Sur... Drlg. 2,235 ft.

Cranfill & Reynolds' No. 2 Willingham, 330 ft. from N and E of NW, Sec. 199, B.B.B.&C.R.R. Sur. ... **Spudding.**

GARZA COUNTY

Humble Oil Ref. Co.'s No. 1 Carswell, 660 ft. S and E of NW cor. of Sec. 23, Blk. A-27, Public School Land ... Location.

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 6, H.&G.N. Sur. ... Location.

Pandem Oil Corp.'s No. 1 Stokes, 2,310 ft. N and 330 ft. E of SW, Sec. 32, Blk. 5, G.H.&H.R.R. Sur. ... **Total depth 3,018 ft.; show oil 2,908-18 ft.; plugged back to 2,938 ft.; 200 ft. oil and 1,700 ft. water in hole; cleaning out and plugging back; to shut off water.**

GLASSCOCK COUNTY

California Co.'s No. 1 Baker, 2,310 ft. from S and 990 ft. from W, Sec. 23, Twp. 2s, Blk. 33, T.&P. Sur. ... **Drlg. 1,003 ft.**

California Co.'s No. 1 Jones, 330 ft. S from N and E lines, Sec. 25, Blk. 33, Twp. 2s, T.&P. Sur. ... **Derrick.**

Group No. 1 Oil Co. and Continental Oil Co.'s No. 1 Miller, 330 ft. S and 990 ft. E of NW cor. Sec. 162, Blk. 29, W.&N.W.R.R. Sur. ... **Show oil 1,400-02 ft.; shut down 1,500 ft.**

Group No. 1 Oil and Continental Oil Co.'s No. 1 Phillips, 330 ft. S and 990 ft. E NW cor., Sec. 24, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ... **Show oil 1,360 ft., 1,700 ft. and 1,800 ft.; drlg. 2,235 ft.**

F. H. E. Oil Co.'s No. 1 Cox, 330 ft. from S and E of SW Sec. 8, Blk. 33, Twp. 2s, T.&P. Sur. ... **Drlg. 2,058 ft.**

Shell Pet. Corp.'s No. 1 Phillips, 1,650 ft. S and 2,310 ft. W of NE cor., Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ... **Location.**

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur... **Show oil 970 ft.; shut down 2,125 ft.**

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor., Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur... **Location.**

HOWARD COUNTY

American Maracaibo Co.'s No. 4-A Settle, 1,040 ft. S and 330 ft. E of NW cor., Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. ... **Total depth 2,260 ft.; top pay 2,177-2,260 ft.; 1,000 ft. oil in hole.**

California Co.'s No. 11 Roberts, Lease 2, 990 ft. N and 2,188 ft. W of SE cor., Sec. 137, Blk. 29, W.&N.W. R.R. Sur. ... **Total depth 3,011 ft.; top pay 2,988 ft.; pumping 150 bbls. oil.**

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ... **Sulphur water 1,433-46 ft.; shut down 1,456 ft.**

Cox et al's No. 1 Flowers, C NE, Sec. 42, Blk. 31, Twp. 1n, T.&P.R.R. Sur. ... **Location.**

McGinley-Sigler's No. 1 Hyman-B, 330 ft. S and W of NE cor. SW, Sec. 89, Blk. 29, W.&N.W. Sur. ... **500,000 ft. sweet gas 1,241-50 ft.; shut down 1,606 ft.**

McGinley-Sigler's No. 1 Hyman-C, 330 ft. N and 990 ft. W SE cor., Sec. 93, Blk. 29, W.&N.W.R.R. Sur. ... **Location.**

Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 ... **Underreaming 6⅝-in. casing 2,275 ft.**

Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ... **Set 10-in. casing; shut down 261 ft.**

Simms Oil Co.'s No. 2 Clay, 330 ft. from S, 2,310 ft. from W. Sec. 127, Blk. 29 ... **Total depth 3,160 ft.; hole full water 3,115 ft.; shot 90 qts.**

HUDSPETH COUNTY

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E ... **Drlg. 4,021 ft.**

Western States Oil Co.'s No. 1 Moore, C SE, Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ... **Shut down 2,760 ft.**

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ... **Fishing 3,155 ft.**

IRION COUNTY

Baker & Hodges et al's No. 1 Tankersley, 750 ft. from N and 170 ft. from W of Sec. 23, G.C.&S.F. Sur. ... **Shut down 1,430 ft.**

Banner Oil Co.'s No. 2 Nutt, 150 ft. from N and E lines W half, Subd. 5, Gonzales County School Land ... **Location.**

Beesley's No. 1 Sawyer Cattle Co., 1,320 ft. N and E of SW cor., Sec. 3,032, Blk. 24, H.&T.C.R.R. Sur. ... **Water 1,705-10 ft.; more water 1,730-40 ft.; shut down 1,950 ft.**

Brown & Fox's No. 2 Tankersley, Sec. 712, F. Willig Sur. ... **Spudded and shut down.**

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N. 150 ft. from W. Subd. 8 ... **Shut down 1,105 ft.**

Cromwell's No. 2 Nutt, 504 ft. from N and 1,162 ft. from W of Subd. 6, Gonzales County School Land... **Drlg. 605 ft.**

Glenn et al's No. 1 Tankersley, NW cor. SW, Sec. 4, G.C.&S.F.R.R. Sur ... **Location.**

Kingwood Oil Co. et al's No. 1 J. D. Suggs, SE NW SE, Sec. 19, Blk. 7, H.&T.C. Sur. ... **Show gas 7,656 ft.; encountered 2-400 ft. sulphur water 7,818 ft.; plugged back to 6,700 ft.; cleaning out to shoot.**

J. A. Starkweather's No. 1 Lindley, Sec. 1,160½, 900 ft. from S, 150 ft. from E, H.&T.C. Sur. on E ... **Hole full salt water 3,275-83 ft.; plugging.**

P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County ... **Show gas 7,931 ft.; drlg. 8,035 ft.**

JONES COUNTY

Atkinson & Sandifer's No. 1 Byron, 300 ft. from S and E of Sec. 17, Edward Mills Sur. ... **Location.**

Mid-Tex Oil Co.'s No. 1 King, 330 ft. E of river and 800 ft. S of N line, Subd. 1, Sec. 197, M. Bueno Sur... **Shut down 1,880 ft.**

Phillips Pet. Co.'s No. 1 Coates, 900 ft. S and 330 ft. W of NE cor. W half of Sec. 17, Blk. 19, T.&P.R.R. Sur. ... **Drlg. 1,640 ft.**

Shabeen et al's No. 1 King ... **800 ft. fluid in hole; shut down 2,204 ft.; top pay 2,061 ft.; cleaning out after shot.**

KENT COUNTY

White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 8, Blk. H, H.&T.B. Sur... **Shut down 272 ft.**

KIMBLE COUNTY

McLean & Jamison's No. 1 Cannon, 1,940 ft. N and 300 ft. W of SE cor. Robert Cochran Sur. ... **Fishing 1,650 ft.**

LAMB COUNTY

Graham Oil & Gas Co.'s No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ... **Shut down 4,128 ft.**

LOVING COUNTY

California Co.'s No. 1 Allen, 330 ft. from SE and SW of Sec. 90, Blk. 1, W.&N.W. Sur. ... **Drlg. 667 ft.**

California Co.'s No. 1 Reagan & McElvain, 330 ft. SW of NE line and 330 ft. SE of NW line, Sec. 84, Blk. 1, W.&N.W.R.R. Sur. ... **Drlg. 350 ft.**

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ... **Drlg. 832 ft.**

Hadlock et al's No. 2 Russell, 1,650 ft. SW of NE line, 2,310 ft. NW of SE line, Sec. 80, Blk. 1, W.&N.W. R.R. Sur. ... **Rigging up.**

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ... **Spudded 140 ft.; shut down.**

Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C.R.R. Sur... **Location.**

Lockhart & Co.'s No. 5 Hubbard, 1,650 ft. SW of NE line and 330 ft. SE of NW line Sec. 83, Blk. 33, H.&T.C. Sur. ... **Top pay 2,305-08 ft.; swabbed 33 bbls.; drlg. 2,450 ft.**

Lockhart & Co.'s No. 1 Wheat-H, 990 ft. from NE and SE lines of Sec. 85, Blk. 33, T.&P. Sur. — Drlg. 5,066 ft., sand.
Lockhart's No. 1 Wheat & Ramsey, 440 ft. from NE and NW of Sec. 83, Blk. 1, W.&N.W. Sur. — Spudding.

LYNN COUNTY

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W. Sec. 10, Blk. 7, E.L.R.R. Sur. — Shut down 190 ft. for casing.
George McCamey's No. 1 Edwards, 165 ft. N and E. Sec. 5, Blk. 2, L.S.&W. Sur. — Top salt 2,140 ft.; oil show 1,580-90 ft.; hole full sulphur water 4,730 ft.; set 6-in. casing 4,733 ft.; shut down 5,040 ft.

MENARD COUNTY

Cromwell & Duffey's No. 2 Winslow, 250 ft. S and E of NW cor. NE of NE, Sec. 36, J. H. Gibson Sur. — Drlg. 2,000 ft.
I. C. Barnett's No. 2 Callan, Sec. 1, 1,050 ft. from S. 1,190 ft. W — 2½ bbls. water hourly, 1,100,000 ft. gas 1,268 ft.
Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. — Drlg. 1,303 ft.

MIDLAND COUNTY

Pure Oil Co.'s No. 1 Hutt, 2,310 ft. from N and 330 ft. from E of Sec. 14, Blk. 38, Twp. 4s, T.&P. Sur. — Drlg. 200 ft.

MITCHELL COUNTY

Magnolia Petroleum Co.'s No. 7 Mary Foster, 330 ft. from N and W line of Sec. 17, Blk. 29, Twp. 1s, T.&P.R.R. Sur. — **Drlg. 1,595 ft.**
Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. R.R. Sur. — **Cleaning out 460 ft. to run 15½-in. casing.**
Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. — **Drlg. 4,915 ft.**

PECOS COUNTY

Amerada Pet. Corp.'s No. 1-B University, 1,650 ft. from W and 990 ft. from S. Sec. 32, Blk. 16 — Total depth 1,550 ft.; top pay 1,545 ft.; flowing 7½ bbls. hr.
Angelo Pet. Co. et al's No. 1 McKenzie, 480 ft. from N and 330 ft. E of CNL, Sec. 3, Blk. 604, G.C.&S.F. Sur. — Drlg. 1,490 ft., anhydrite.
Atlantic O. P. Co.'s No. 1 Shearer, 330 ft. from NW and SW, Sec. 107, Blk. 10, H.Y.N.R.R. Sur. — Show oil and gas 1,052 ft. and 1,170 ft.; top pay 1,438 ft.; plugged back to 1,459 ft.; swabbing 20 bbls. oil every 4 hrs., 30 per cent water.
Cardinal Oil Co.'s No. 1 Tippett-Kirby, 330 ft. W and 1,350 ft. N from CSL, Sec. 40, Blk. 194, G.C.&S.F. R.R. Sur. — **Shut down 107 ft.**
California Co.'s No. 1 Jasper Co. Realty Co., 165 ft. from NE line and 159 ft. from SE line of California Co.'s 160 acres, Sec. 21, Blk. 10, H.&G.N.R.R. Sur. — **Location.**
Cosby Prod. & Ref. Co.'s No. 1 Cordova, 330 ft. from N and E of S 320 ac., Sec. 11, Blk. 11, H.&G.N. Sur. — **Top salt 725 ft.**
Cosden Oil Co.'s No. 1 McDonald, 350 ft. from N and E of Sec. 1, H.E.&W.T. Sur. — **Flowing water 1,645 ft.; shut down 2,016 ft.**
Cowboy Evans' No. 1 Pecos Valley, 1,307 ft. from SE line, 907 ft. from SW line to Sec. 36, Blk. 3, H.& T.C.R.R. Sur. — **Location.**
Cromwell et al's No. 1 University, 1,980 ft. from S and 2,310 ft. from E. Sec. 16, Blk. 16 — **Machine.**
Dixie Oil Co.'s No. 1 McKinzie, 3,300 ft. from N and 2,025 ft. from W of Sec. 15, Blk. 604, G.C.&S.F. — **Drlg. 2,740 ft.**
Dixie Oil Co.'s No. 1 Torborg, 150 ft. from S and W lines of E half, Sec. 539, A.&B. Sur. — **Shut down 290 ft.**
Dixie Oil Co's No. 3 Torborg, 735 ft. N and 150 ft. E from CSL of Sec. 539, Blk. A-3, Arnold & Barrett Sur. — **Shut down 440 ft.; top pay 335 ft.; 200 ft. oil in hole.**
Fisher & Lowrie's No. 1 Webb, C, Sec. 3, Blk. 203, Tillman & Walters Sur. — Location.
A. M. Griffith's No. 1 Ferenbach et al, 2,112 ft. from W line, 1,320 ft. from S line, Sec. 9, Blk. 603, G.C.&S.F. Sur. — Drlg. 2,840 ft.
Galt-Brown's No. 1 Thompson, 660 ft. from S and 1,100 ft. from E. Sec. 71, Blk. 194, G.C.&S.F. Sur. — **Top salt 730 ft.; drlg. 745 ft.**
Hayes et al's No. 1 Lea, C NW of NE, Sec. 9, Blk. 106, T. & St.L. Sur. — Location.
Hussman Oil Co.'s No. 1 Esters, 960 ft. from N and 300 ft. E. Sec. 83, Blk. OW, T.M.R.R. Sur. — **Total depth 1,560 ft.**
Independent Oil & Gas Co.'s No. 1 Jasper County School Land, 1,160 ft. from SE line, 160 ft. from NE line, Sec. 21, Blk. 10, H.&G.N.R.R. Sur. — **Location**
Landreth Prod. and Henshaw Bros.' No. 1-E University, 330 ft. N and W of SE cor. W half NE, Sec. 13, Blk. 18, University Land — **4,000,000 ft. gas; drlg. 1,480 ft.**
Landreth Prod. and Henshaw Bros.' No. 2-I University, 330 ft. S and W of NE, Sec. 24, Blk. 18, University Land — **Cellar.**
Martin A. Meyer et al's (formerly Mauch & Kroger) No. 1 Holmes, S half SW, Sec. 5, Blk. 178, T.C. Sur. — **Shut down 2,224 ft.; 5 bailers sulphur water hourly 2,215-24 ft.**
Messenger et al's No. 1 Byrne, 2,130 ft. from NW line, 1,830 ft. from SW line, Sec. 54, Blk. 10, H.&G.N.R.R. Sur. — Spudded and shut down.
R. E. Moore's No. 1 Arnold, 1,320 ft. from S and 660 ft. from E lines of Sec. 18, Blk. 1, H.&T.C.R.R. Sur. — **Show oil 1,216 ft.; show oil 1,402 ft.; shut down for orders 1,850 ft.**
J. R. Miller et al's No. 1 Bennett, 359 ft. W from CWL, Sec. 1, Blk. 119, G.C.&S.F. Sur. — Spudded and shut down.
J. D. O'Mara's No. 1 Bennett, Sec. 592, 1,460 ft. from S. 150 ft. from E. G.&C.S.F. Sur. — Fishing 900 ft.
J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. — **Show oil 1,785 ft.; shut down 1,905 ft.**
Peren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. — Spudded and shut down.
R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C.R.R. Sur. — **Location.**
M. M. Rowan's No. 1 University, NE, Sec. 25, Blk. 16 — Total depth 2,490 ft.; plugged back 1,815 ft.; machine moved off.
Phillips Pet. Corp.'s No. 3 Monroe, 3,860 ft. from N and 660 ft. from E, Sec. 39, Blk. 194, G.C.&S.F. — **Cellar.**
Phillips Pet. Corp.'s No. 5 Ramsey, 330 ft. from N and 1,650 ft. from W of Sec. 17, Blk. 194 — Drlg. 1,140 ft.; show oil and gas 1,115-35 ft.
Phillips Pet. Corp.'s No. 1 Shearer, 330 ft. from NE and SE lines of S, Sec. 99, Blk. 10, H.G.N.R.R. Sur. — **Rigging up.**
Rector Oil Co.'s No. 1 Young, 330 ft. S and 1,650 ft. E of SW cor., Sec. 26, Blk. 9, H.&G.N. Sur., but in Sec. 4, Blk. 3, H.&T.C. Sur. — **Shut down 450 ft.**
Southern Crude Oil Pur. Co.'s No. 1 Eaton, 330 ft. from SE line, 1,650 ft. from SW line of Sec. 35, Blk. 3, H.T.C.R.R. Sur. — **Drlg. 135 ft.**
Southern Crude Oil Pur Co.'s No. 1 McKenzie, Sec. 10, Blk. 604 — Show oil 2,005 ft.; total depth 2,315 ft.; plugged back to gas.
Southern Crude Oil Pur. Co.'s No. 2 Tippett-A, 150 ft. from N and 165 ft. from E lines of their "A" lease, Sec. 61, Blk. 194, G.C.&S.F.R.R. Sur. — Top pay 365 ft.; total depth 457 ft.; 150 ft. in oil.
Shell Pet. Corp.'s No. 1-D University, 1,650 ft. from E and 990 ft. from W of Sec. 32, Blk. 16 — Show gas 936 ft.; shut down 1,645 ft. to test.
Shell Pet. Corp.'s No. 2-B Smith, 1,006 ft. S and 330 ft. W of NE cor., Sec. 24, Blk. 194, G.C.&S.F.R.R. Sur. — Shut down 1,609 ft.
Shell Pet. Corp.'s No. 5 Smith-D, 990 ft. N and W of SE cor. of Sec. 24, Blk. 194, G.C.&S.F.R.R. Sur. — Skidded rig 9 ft. south; rigging up.
Shell Pet. Corp.'s No. 1 University-E, 330 ft. from S and W lines of NE, Sec. 31, Blk. 16, University Land — Spudding 172 ft.
Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. — Shut down 802 ft.
Simms Pet. Co.'s No. 1 University, 1,650 ft. N and 330 ft. W of SE cor., Sec. 21, Blk. 19, University Land — Drlg. 1,636 ft.
Skelly Oil Co.'s No. 2 University-Bower, 330 ft. S and E of NW cor. of SE, Sec. 31, Blk. 16, University — Total depth 972 ft.; top pay 964 ft.; flowing 25 bbls. hr.
The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor., Sec. 9, Blk. 131, T.&S.T.L. Sur. — Drlg. 430 ft.
Transcontinental Oil Co.'s No. 1 University, 1,980 ft. N and E of SW cor., Sec. 18, Blk. 18, University Land — Straightening crooked hole 4,910 ft.
Transcontinental and Arkansas Fuel Oil Co.'s No. 2 Matthews, 1,060 ft. from E and 330 ft. from N line of SE, Sec. 10, Blk. 194, G.C.&S.F.R.R. Sur. — Top pay 1,472 ft.; total depth 1,715 ft.; fishing.
Transcontinental and Arkansas Fuel Oil Co.'s No. 3 Matthews (Smith), 330 ft. from S. 1,960 ft. from E of NE, Sec. 10, Blk. 194, G.C.&S.F. Sur. — Topped lime 1,414 ft.; drlg. 1,531 ft.; top pay 1,464 ft.; flowed 40 bbls. in 24 hrs.
Transcontinental and Arkansas Fuel Oil Co.'s No. 1-A Smith, 2,310 ft. from N and 1,290 ft. from E of Sec. 11, Blk. 194, G.C.&S.F. Sur. — Total depth 1,465 ft.
Transcontinental Oil Co. et al's No. 2 Sellman, 990 ft. from N and 2,310 ft. from E of Sec. 8, Blk. Z, T.C. Sur. — Running 6-in. casing 1,715 ft.
Trees Oil Co.'s No. 3 Trees, 330 ft. from S and W of Sec. 90, Blk. T, H.&G.N. Sur. — Drlg. 1,575 ft.
W. F. Walsh et al's No. 1 Scharbaur Cattle Co., 330 ft. S and 990 ft. E from C, Sec. 16, Blk. 136, T.&St. R.R. Sur. — Rigging up.
World Oil Co.'s No. 1-C University, 1,650 ft. from N, 990 ft. W, Sec. 7, Blk. 20, University Land — Set 10-in. casing 753 ft.; drlg. 2,090 ft., lime.

PRESIDIO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N and 1,188 ft. from E lines of Sec. 245, Blk. 4 — Shut down 570 ft.
Eastland Oil Co.'s No. 1 Tootle, C, Sec. 17, Blk. 1, D.P. R.R. Sur. — Spudded; shut down.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land — Top pay 2,903 ft.; 1,000 ft. fluid in hole; top pay 6,807 ft.; shut down 8,430 ft.; hole is 2° off at 8,340 ft.; cleaning out.
Hagan & Emeh and Amerada's No. 1 Sawyer Cattle Co., 330 ft. from S and 990 ft. from E lines of Sec. 125, Blk. 1, T.&P. Sur. — Location.
Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 — Showing oil and gas at 8,220 ft.; total depth 8,220 ft.; flowed an average 122 bbls. daily.
Texon Oil & Land Co.'s No. 2-B University, 4,655 ft. from S, 250 ft. from W, Sec. 36, Blk. 9 — Total depth 5,914 ft.
Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W, Sec. 36, Blk. 9 — Drlg. 4,414 ft.

REEVES COUNTY

Exploration Co.'s No. 1A, A. Kinney, 1,500 ft. W of NE cor., Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. — Shut down 2,900 ft.
H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. — Shut down 380 ft.
Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 59 — Shut down 1,827 ft.
Southern Crude Oil Pur. Co.'s No. 1 Kloh-Rumsey, 2,310 ft. N and W SE cor., Sec. 23, Blk. 51 — Show oil 3,410-20 ft.; shut down 3,575 ft.
David B. Thompson's No. 1 A. A. Eddins, Sec. 9, Blk. C-1 — Shut down 5,658 ft.

RUNNELS COUNTY

Gibson & Johnson's No. 1 Johnson, 2,310 ft. N and 1,650 ft. W of SE cor., Sec. 150, E.T.R.R. Sur. — Drlg. 1,473 ft.
Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. — Derrick.
George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 — Show oil 2,028 ft.; shut down 2,504 ft.
McLean's No. 1 Clayton, 150 ft. from N line, 270 ft. from W line of Sec. 133 — Shut down 1,185 ft.; probably be abandoned.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW, Sec. 56, Blk. 1, G.H.&S.A.R.R. Sur. — Underreaming 8¼-in. casing; total depth 2,635 ft.
Interstate's No 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. — Preparing to cement 6,100 ft.
Tros & Grant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A.R.R. Sur. — Location.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. Sur. — Underreaming 8¼-in. casing; total 2,385 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 330 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. — Shut down 1,732 ft.
Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S. 300 ft. from E. Sec. 12, Blk. 3, H.&T.C.R.R. Sur. — Drlg. 3,925 ft.; hole full water 3,915-19 ft.
Maxwell & Lou Ladd's No. 1 Koonsman, W half, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. — Shut down 160 ft.
I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. — Spudded and shut down 300 ft.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. — Cleaning out and underreaming 6⅝-in. casing 4,325 ft.
Magnolia Pet. Co.'s No. 1 More, 1,320 ft. from S and W, Sec. 379, Blk. 97 — Top salt 750 ft.; encountered 500,000 ft. gas 1,510 ft.; oil show 2,215 ft.; shut down 4,050 ft.
Transcontinental Oil Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. — Fishing tools 525 ft.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Willson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W — Location.

TAYLOR COUNTY

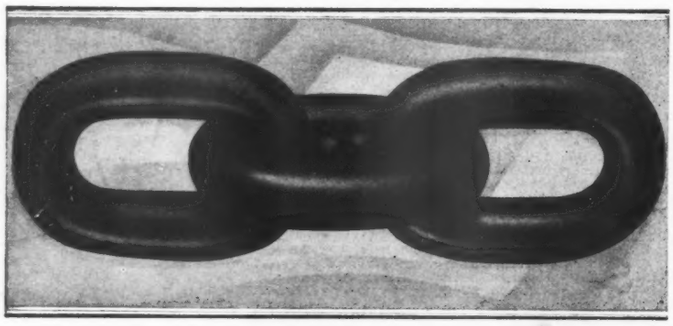
Condor Pet. Co.'s No. 1 Allen, C of NW, Sec. 230, Blk. 64, H.T.C.R.R. Sur. — Drlg. 1,595 ft.
A. H. Gibson et al's No. 1 Cody, 888 ft. N and 360 ft. W of SE cor., Lot 2, Sec. 18, Guadalupe County School Land — Drlg. 1,057 ft.
Gibson & Johnson's No. 1 Bingham, 330 ft. N and E of SW cor. their 270.8-ac. tract, Sec. 31, Guadalupe County School Land — Shut down 700 ft.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land — Show oil 4,917 ft.; drlg. 5,622 ft.
Mid-Continent Pet. Corp.'s No. 1 Lindsey, 239 ft. N and 219 ft. E of SW cor., Subd. 22, Guadalupe County School Land — Rigging up.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T.R.R. Sur. — Drlg. 1,410 ft., black shale.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. — Shut down 3,150 ft.

TRADE YALE MARK

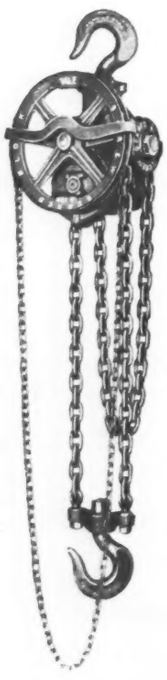
STEEL CHAIN



EACH link is made with full respect for its individual importance. That chain is no stronger than its weakest link is trite, but true. So true that Yale takes every precaution with the manufacture of all chain used in Yale Chain Blocks. EVERY LINK is made of special heat treated steel. EACH LINK is die formed, electrically welded, trimmed, and *stretched to gauge*, that the unit of chain may offer the utmost in strength, safety and service.

THE YALE & TOWNE MFG. CO., STAMFORD, CONN., U.S.A.

Canadian Branch at St. Catharines, Ontario



YALE Hoisting and Conveying Systems

YALE MARKED IS YALE MADE

Miller Bros.' No. 1 Allison & Burke, C NW cor., Sec. 10, Blk. 176, T.&P. Sur. ..... Location.
Mrs. J. B. McPhee's No. 1 Sam Belt, C, Sec. 78, Blk. D-7, E.L.&R.R. Sur. ..... Shut down 880 ft.; moved off machine.
Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F.R.R. Sur. ..... Drlg. 2,760 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 640 ft.

TERRY COUNTY

Atlantic et al's No. 1 Carlisle, 990 ft. from S and E of Sec. 58, Blk. E, E.L.&R.R. Sur. ..... Drlg. 1,950 ft.
Kingsland Oil Prod. Co.'s No. 1 Brownfield, C NW SW SW, Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Cannon et al's No. 1 Rust, 990 ft. S, 990 ft. W of NE cor. of Sec. 745 ..... Location.
Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor., Sec. 20, Blk. 24, H.T.C.R.R. Sur. ..... Location.
Ellis et al's No. 1 Lewis, 450 ft. S and 150 ft. E of SE cor. of J.W. Sur. in Albert Black Sur., Sec. 75 ..... Show oil 428-43 ft.; shot 20 qts. 428-40 ft.; no results.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW, Sec. 1,628, E. H. Ringer Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.
Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Spudding.
E. W. Wiley et al's No. 1 Maier, 200 ft. from E. 110 ft. from N, Sec. 6, Blind Asylum Land ..... Show oil 418-20 ft.; total depth 512 ft.

UPTON COUNTY

Cordova Union Land Co.'s No. 1 fee, 330 ft. from S and E line of Sec. 1, Blk. 1, M.-K.-T.R.R. Sur. ..... Location.
Eppenauer Drlg. Co.'s No. 1 Chaney, 2,310 ft. from N and 330 ft. from W of Sec. 18, Blk. 3, M.-K.-T. Sur. Shut down 600 ft.
Gulf Prod. Co.'s No. 3-B Hughes, 160 ft. N and 161 ft. W of most southely SE cor. of their 200-ac. lease "B" out of Wm. Teer Sur. ..... Rig.
Pure Oil Co.'s No. 3 Hughes, 150 ft. S and 767 ft. E of NW of their 300 ac., Sec. 4, Wm. Teer Sur. ..... Partly rigged up; shut down.
T. P. Coal & Oil Co.'s No. 1 Belcher, 1,320 ft. from N and 2,310 ft. from W line, Sec. 10, Blk. 4½, G.C.& S.F.R.R. Sur. ..... Top salt 1,310 ft.; drlg. 3,365 ft., anhydrite.

VAL VERDE COUNTY

A. Bluhm's No. 1 Yoas, 1,760 ft. N, 600 ft. W of SE cor., Sec. 31, Blk. 3, I.&G.N. Sur. ..... Machine on ground.
Independent Operators' No. 1 Whithead, SE SE, Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,850 ft.
O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125-700 ft. gas; shut down 5,727 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L.&R.R. Sur. Show oil 1,535 ft.; shut down 2,551 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE, Sec. 47, Blk. Y. Shut down 4,009 ft.

WARD COUNTY

Alpine Oil & Gas Co.'s No. 1 Dakan, 228 ft. from NE and 150 ft. from SE line, Tract 8, Sec. 11, Blk. 5, H.&T.C. Sur. ..... 1,000 ft. oil in hole; top pay 2,148 ft.; total depth 2,210 ft.; shot 90 qts.; to pump.
Atlantic and Dorr's No. 1 Costley, 1,722 ft. SE of NW line and 990 ft. SW of NE line, J. W. Howe Sur. No. 2 ..... Drlg. 2,390 ft., sand and lime.
Atlantic and Delmar's No. 7 Hayzlett, 1,650 ft. from NE and NW of Sec. 17, Blk. 5 ..... Location.
Gulf Prod. Co.'s No. 3 Hutchins, 2,310 ft. from N and 330 ft. from W. Sec. 1, Blk. F, G.M.M.B.&A. Sur. .... Top salt 1,035 ft.; top brown lime 2,310 ft.; increase in gas 2,608-10 ft.; show oil 2,685 ft.; flowed 155 bbls. oil, total depth 3,102 ft.
Gulf Prod. Co.'s N. 7 O'Brien, 320 ft. S and W. Sec. 22, Blk. F, G.M.M.B.&A. Sur. ..... Hole full sulphur water 3,408 ft.; slopped over casing; total depth 3,566 ft.; plugged back to 3,025 ft.; preparing to test; swedging 8¼-in. casing 2,280 ft.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW, Sec. 18, Blk. 5, H.&T.C. Sur. Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C.R.R. Sur. .... Location.
Tex-Oil Prod. Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C.R.R. Sur. ..... Show gas 2,806-09 ft.; shot 30 qts. 3,245-75 ft.; shot 120 qts. from 3,240-75 ft.; drlg. 4,465 ft.
Penn and Atlantic's No. 2 Bennet, 2,310 ft. S line, 1,650 ft. W line, Sec. 16, Blk. 34, H.&T.C.R.R. Sur. ..... Top pay 2,347 ft.; total depth 2,630 ft.; averaging 20 bbls. daily.
Richardson et al's No. 1 O'Brien et al, 332 ft. from N and 360 ft. from W. Sec. 5, Blk. F, G.M.M.B.&A. Sur. Top salt 1,230 ft.; drlg. 2,463 ft.
Shell Pet. Corp.'s No. 1 Owens, located NE cor. of Sec. 16, Blk. 15, H.&T.C.R.R. Sur. ..... Top pay 2,886-93 ft.; increase at 2,909 ft. and 3,023-32 ft.; shot 90 quarts from 2,473-93 ft.; increase in oil 3,022-32 ft.; averaging 37 bbls. day; drlg. 4,253 ft.
Shipley et al's No. 4 Hayzlett, 2,050 ft. NW of SE and 2,420 ft. NE of SW line of Sec. 17, Blk. 5, H.&T.C. R.R. Sur. ..... Top salt 720 ft.; drlg. 2,784 ft.
Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 ..... Shut down 385 ft.
J. E. Smith's No. 1 Clement, 152 ft. SW of NE line and 153 ft. SE of NW line, Lot 7, Sec. 7, Blk. 32, H.&T.C.R.R. Sur. ..... Shut down 560 ft.
Southern Crude Oil Pur. Co.'s No. 1 Harris, 1,458 ft. from N and 1,406 ft. from E of Sec. 30, Blk. B-19 . Drlg. 2,432 ft.
Sturm & Paine's No. 1 Cummins, 748 ft. from NE and 155 ft. from NW of Sec. 7, Blk. 32, H.&T.C.R.R. Sur. Shut down 2,350 ft.; show oil and gas 2,170 ft.
Sun Oil Co.'s No. 2 Sealy, 330 ft. from N and E of Sec. 88, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 2,555 ft.

WINKLER COUNTY

A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Top salt 1,300 ft.; shut down 2,832 ft.; show oil 2,775-85 ft.
Cinderella Syndicate's No. 1 Hendricks, 330 ft. N, 1,650 ft. W, Sec. 42, Blk. 26, Public School Land ..... Total depth 150 ft.; rig.
Humble Oil & Ref. Co.'s No. 3 Wahon-B, 2,310 ft. S and W of NE cor., Sec. 47, Blk. 26, School Land ..... Drlg. 2,433 ft.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Top brown lime 2,510 ft.; drlg. 3,630 ft.
Shell and The Texas Company's No. 1-B Cowden, 660 ft. from S and W of Sec. 39, Blk. B-5, Public School Land ..... Drlg. 2,239 ft.
Sun Oil Co.'s No. 1 Sealy, 2,310 ft. N line, 330 ft. from W line, Sec. 52, Blk. F, C.M.M.B.&A. Sur. ..... Drlg. 3,275 ft.

WE KNOW what the Cut Oil Elephant is Really Like

The three blind men lacked experience with elephants. One reported it "like a great snake," another "like a tree," and the third "like a wall."

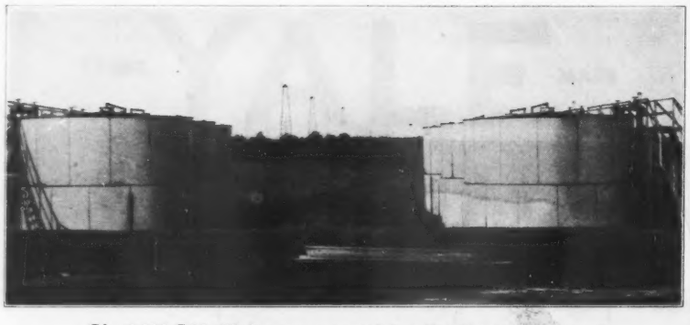
We know cut oil and B. S. from every angle. Our experience dates back to 1916 and before, and includes the successful treating of countless varieties of petroleum emulsions, as well as a tremendous amount of research work done in order that no cut oil problem could ever baffle us.

Tret-O-litE is prepared and serviced by an organization which has accumulated the world's greatest store of knowledge relating to the treating of petroleum emulsions.

In every oil district are Tret-O-litE representatives ready to bring to your lease, at your request, the facilities and accumulated experience of the Wm. S. Barnickel & Co. organization.

WM. S. BARNICKEL & COMPANY
ST. LOUIS, MO.
Offices and Plant, Webster Groves, St. Louis County, Missouri

Tret-O-litE
Reg. U. S. Pat. Off.



Six 1,000-Bbl. Maloneys, erected by distributer, Maloney Sales Corp., for I.T.I.O. Co. on Button Canfield Lease, Oklahoma City.

Shut the Door on Oil Losses!

An enormous amount of sheer waste results from the practice of many operators who allow lease tanks to breathe and thus to dissipate good oil into the atmosphere.

—Get Bigger Checks from the Pipe Line Companies

You can shut the door on such oil losses by using MALONEY Vapor-Pressure Tanks. These tanks hold the vapors under sufficient pressure to restrict breathing, preventing the escape of gasoline-laden vapors, and maintaining the well gravity of the oil until it is delivered to the pipe lines.

"Alone in Quality"

MALONEY TANK MFG. COMPANY
Tulsa, Okla., U.S.A.

Distributers at All Principal Petroleum Points

Maloney A.P.I. Bolted Steel Tanks conform to A.P.I. dimensional standards and carry the official A.P.I. monogram.

MADE OF AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY
'ALONE'

CENTRAL WEST FIELDS

(Continued from Page 82)

finding commercial production in the Niagara, Clinton and Trenton lime formations which are found at depths varying from 60 feet to 1,200 feet, the latter being the Trenton, although it has been found as shallow as 900 feet. South Bend people are planning this heavy development.

ILLINOIS

There has been a scarcity of completions in the active Dupo Field in Sugar Loaf Township, St. Clair County, in western Illinois, south of East St. Louis, on account of high water. The Ohio Oil Co.'s second test on the J. A. Reichert farm, Section 27, pumped 20 bbls. initial from 698-746 feet. E. R. Collins and others' test in the SW cor. of the Fred Engolke in Survey 165, same township, was dry from 564-630 feet. Ellis & Thomas got a duster in the SE cor. of the Sophia Pittman, NW Section 28, from 595-620 feet. Hagerman & Waldon's No. 1 well, 1,200 feet from the south line and 600 from the west line of the Fred Eckert farm, SW Section 34, same township, showed an initial of 22 bbls. from 672-732 feet.

The Warner-Caldwell Oil & Gas Co.'s No. 9 well, 750 feet from the west line and 700 feet from the east line of the J. C. Furman farm, SW NW Section 6, Robinson Township, Crawford County, pumped but 1 bbl. at a depth of 1,137 feet.

KENTUCKY FIELDS

(Continued from Page 78)

netts Church Pool, which is reported with an initial of 250 bbls. from the Stray sand at 650 feet. Their No. 5 on the J. A. Stewart farm, in the same area, produced an initial of 200 bbls. from a depth of 599 feet.

The Kemrow-Cumberland Petroleum Co. got a nice producer in No. 7 on the Cicero M. Wade farm, in the Buford area, which is reported at 125 bbls. initial.

Southeast of Whitesville, near the hamlet of Oklahoma, northwest of the Ambrose-Weller Pool, James C. Ellis and others' No. 8 Tater Howard farm, pumped 15 bbls. in 24 hours.

Leeper Oil Co.'s No. 1 J. W. Greer farm, in the Whittaker Pool, and 600 feet from the south line and 200 feet from the west line of the farm, pumped 50 bbls. in 24 hours.

In the Friendship Church area of the county, Dr. Sirmans' No. 23, on the Nancy Farmers farm, is rated good for 50 bbls. initial.

Daviess County

Evans and Garrison's second test on the J. M. Clark farm, in the Utica Field of Daviess County, is a 25-bbl. producer at a total depth of 1,446 feet.

E. C. Thomas and others' No. 3 on the E. C. Ward 95 acres, in the Jones Pool, was dry. This well is 400 feet from the north line and 200 feet from the east line of the farm.

R. W. McMahon abandoned his test on the Roy Hudson farm, in the southeastern part of the county.

Henderson County

Henderson County looms up like the next big field in western Kentucky. The Niagara Oil & Gas Co.'s No. 2 G. P. Jeter farm, a quarter of a mile west of the town of Niagara, is in and produced 60 bbls. initial at 707 feet.

The Southern Oil Producing Co., or Turner & Lewis of Scottsville, Ky., got a 20-bbl. producer in No. 4 on the Edward Farley farm, 2½ miles northeast of Niagara, near Coraville. No. 3 on this farm produced an initial of 30 bbls.

Imperial Oil & Gas Products Co.'s No. 1 on the John Barrett farm, 5 miles south of Henderson, came in a dry hole at a total depth of 2,185 feet.

McLean County

The Penn-Indiana Oil Co.'s test on the A. Tippin farm, in McLean County, was dry.

Warren County

Ortman & Grimsley drilled in No. 3 B. D. Davis farm, southwest of Bowling Green, in Warren County, getting a dry hole in the shallow 485-foot sand. The well is 100 feet from the south line and 1,000 feet from the west line of the lease.

Schriver and others' test, 1,400 feet from the north line and 1,800 feet from the west line of the Earnest Phillips farm, southwest of Bowling Green, pumped but 1 bbl. at 1,160 feet.

Eastern Kentucky

In the Monticello Field of Wayne County, J. C. Blair and others are due in with No. 1 on the J. F. Gregory farm, District 5.

In McCreary County, Bain & Hogue's second test on the Eli Phipps farm, District 3, pumped 5 bbls. in 24 hours.

In the Weir sand Field of Lawrence-Johnson Counties, District 32, the Boston-Southwestern Oil & Gas Co.'s No. 24 R. M. Sparks, pumped 3 bbls. The Swiss Oil Corp.'s No. 36 Jess Lyons farm, pumped 10 bbls., while Nos. 51 and 60 on the P. P. Holbrook farm pumped 15 and 10 bbls., respectively.

In Johnson-Magoffin Counties, in the Paintsville Field, District 25, the Bed Rock Petroleum Co. found a fair gas well on the W. H. Conley farm below the 2,000-foot depth. In District 27, Wagner & Matthews' No. 4 Fairchilds Heirs farm, pumped 4 bbls. In District 29 the Hamlin Tanner Oil Co.'s No. 6 Milt Tackett, pumped 5 bbls. In District 31, Hupp, Duff and others' No. 9 J. M. Fraizer, pumped 10 bbls. initial.

K. M. Dale and others, of Marietta, Ohio, are reported starting a test on the Reidland property, near Paducah, in McCracken County.

In District 27, Johnson-Magoffin Counties, the Mosbold Development Co. is drilling on the Louis Caudill farm. In District 29, same area, Hudson, Collins and others are drilling No. 19 on the Eliza and Mahala Conley farm.

In Lee-Owsley Counties, District 16, C. G. Mays is drilling No. 6 on the Medley S. Cole farm.

Pigeon Rock Oil Co. is drilling No. 14 on the Stearns Coal & Lumber tract, in District 3, McCreary County.

EASTERN FIELDS

(Continued from Page 78)

trict, the same company has rig up and tools at a location on the V. B. Pyles farm. In the same district, the Valley Oil & Gas Trust Co. has rig material on the Sterm Brothers' farm. In Mannington district, Marion County, the Clifton Oil & Gas Co. is building a rig on the Campbell heirs' farm. In Church district, Wetzel County, Cochran & Cochran are drilling on top of the 30-foot sand on the E. J. Hoge farm.

In Clay district, Wirt County, Grover Whitecotton and others are due in the sand on the C. C. Jackson farm. In the same district, E. Hayhurst & Co. are drilling a second test on the A. W. Lewis farm. In Union district, Clay County, H. B. Davenport & Co. are due in the sand at a second test on the Thompson Land & Coal Co. tract. In Union district, Pleasants County, Albert Neely and others are drilling on the Ralph Williamson farm. In McKim district, Hinds Pevey is drilling on the P. J. Reed farm and O. F. Casper has a rig up on the George Reed farm. In Jefferson district, the Heilman Oil & Gas Co. is drilling a second test on the Lafayette Pethtel farm. In Reedy district, Wirt County, the Hope Construction & Refining Co. is due in the sand on the Leander Vandal farm.

SOUTHWEST PENNSYLVANIA

In the McDonald district, Washington County, the Carnegie Natural Gas Co. has a duster on the A. P. Sarden farm. In south Fayette Township, Allegheny County, R. D. Porter has a fifth sand gasser on the E. Harriott farm.

In Perry Township, Greene County, the Peoples Natural Gas Co. has a duster in the fifth sand at No. 3,521 on the Keiger heirs' farm. In Richhill Township, the Natural Gas Co. of West Virginia has a gasser in the salt sand on the Jesse Clutter farm.

VEZ

● The wide acceptance of VEZ for treating cut oil is best expressed by the ever growing number of producers who use it.

THE VEZ COMPANY

Manufacturing Chemists

2221-3 Laws Street ▼ Dallas, Texas

Bristow, Oklahoma	Wichita, Kansas	Borger, Texas	Wink, Texas
Wewoka, Oklahoma	Tullos, Louisiana	Luling, Texas	Pampa, Texas
Shawnee, Oklahoma	Wichita Falls. Texas	Big Spring, Texas	Benavides, Texas

El Dorado, Arkansas — Seal Beach, California

Grade A, Pasteurized!

Because the home has no laboratory, cities determine the quality of the milk produced by any given dairy and require that it be so labeled.

In the petroleum industry every great producing, refining and pipe line company has its own highly technical and impersonally critical staff. Frick-Reid supplies and equipment, having run the gamut of these practical and technical laboratories for many years, are now universally recognized as, if you please, Pure Cream, Grade A, Pasteurized. In other words the Quality is in every instance unexcelled and all factors of safety at the maximum.

AXELSON MANUFACTURING CO., LTD.
Sucker Rods, Pull Rods, Working Barrels, Etc.

BEAUMONT IRON WORKS COMPANY
Dreadnaught Rotary Drilling and Pumping Equipment

DONOVAN BOILER WORKS
Oil Country Boilers and Tanks

FRICK-REID SERVICE RUBBER BELTING
Our Own Specifications

JONES & LAUGHLIN STEEL CORPORATION
Tubular Goods, Seamless and Lapwelded

NATIONAL TRANSIT PUMP & MACHINE COMPANY
Pumps and Pipe Line Equipment

WILLIAM POWELL COMPANY
Valves for the Oil Industry

J. P. RATIGAN
"Sure Grip" Line of Pumping Equipment

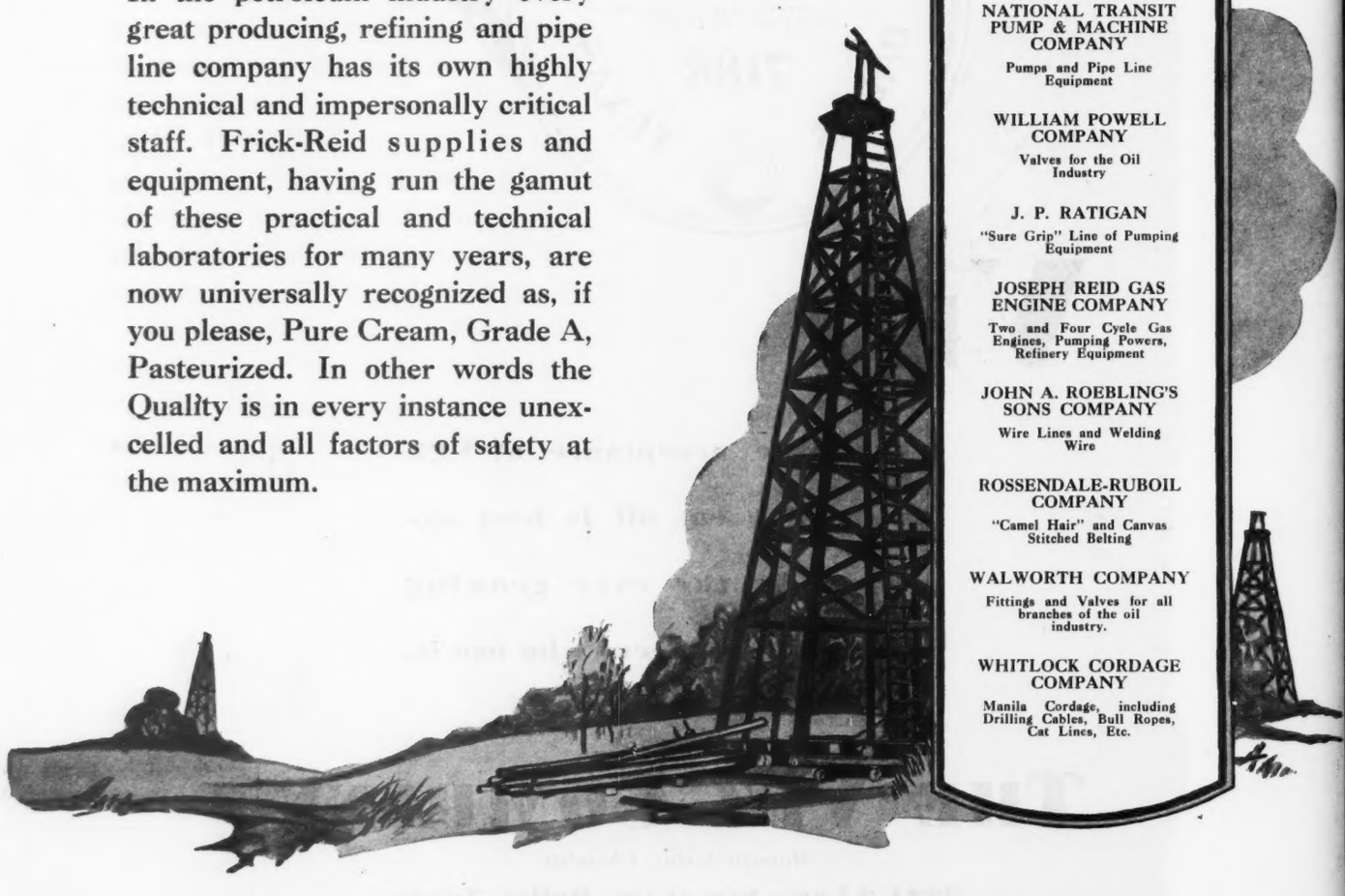
JOSEPH REID GAS ENGINE COMPANY
Two and Four Cycle Gas Engines, Pumping Powers, Refinery Equipment

JOHN A. ROEBLING'S SONS COMPANY
Wire Lines and Welding Wire

ROSSENDALE-RUBOIL COMPANY
"Camel Hair" and Canvas Stitched Belting

WALWORTH COMPANY
Fittings and Valves for all branches of the oil industry.

WHITLOCK CORDAGE COMPANY
Manila Cordage, including Drilling Cables, Bull Ropes, Cat Lines, Etc.



FRICK-REID
SUPPLY CORPORATION

Pittsburgh, Pa. **Tulsa, Okla.**

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 53)

R. O. Roy's No. 1-B Farmer, 660 ft. S, 660 ft. E, NE SW, Sec. 13-13-13 ..... Derrick.
R. O. Roy's No. 1 Lee, 660 ft. N, 660 ft. E, SW cor., Sec. 33-14-13 ..... Derrick.

FRANKLIN PARISH

Davis et als' No. 1 Moore, 600 ft. W, 200 ft. S, NE cor., Sec. 12-11-6 ..... S.D. 1,430 ft.
Evansville Inv. Co.'s No. 1 W. B. Welch, 945 ft. E, 511 ft. N, SW cor., Sec. 2-14-8 ..... S.D. 3,030 ft.
Franklin O. & G. Co.'s No. 1 T. J. O'Brien, 300 ft. N, 300 ft. E, SW cor. NW, Sec. 17-15-9 ..... Drlg. 2,501 ft.

NATCHITOCHES PARISH

S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 23-5-6 ..... Tested 1,000,000 ft. gas and S.W. 3 ft; S.D. for orders; T.D. 2,536 ft.
Robelline O. & G. Co.'s No. 1 Winn, 558 ft. N, 348 ft. E, SW cor. SE, Sec. 7-8-9 ..... S.D. 1,600 ft.

OUACHITA PARISH

J. L. Bullock, trustee's No. 1 W. Va. Lbr. Co., N½ NE. Sec. 25-18-5 ..... S.D. account of high wtr; T.D. 1,700 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e ..... S.D. for fuel 2,650 ft.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. E, NW cor., Sec. 32-14-10 ..... Sidetracking junk; T.D. 1,640 ft.
LeGrande et als' No. 1 Sample, Sec. 11-14-11 ..... Rigging up.

RICHLAND PARISH

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Sec. 13-17-5 ..... Derrick.
Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6 ..... Waiting orders; T.D. 3,679 ft.
Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6 ..... Tested S.W; W.O. 2,477 ft.
Austin & McDonald's No. 4 Millsaps, NW cor., Sec. 16-17-6 ..... Location.
Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6 ..... Derrick.
W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-7 ..... Derrick.
Richland O. & G. Co.'s No. 1 Singleterry, 1,930 ft. N, 660 ft. W, SE cor., Sec. 20-18-7 ..... Cmtd. 9-in. csg. 970 ft.
Shreveport Contractors, Inc.'s No. 1 Bule, 600 ft. E, 400 ft. N, SW cor., Sec. 17-16-7 ..... S.D; shale and boulders 2,527 ft.

SABINE PARISH

Bridges-Clark Oil Co.'s No. 1 Cook, 150 ft. S, 200 ft. W, NE cor. NW NW, Sec. 3-9-12 ..... Derrick.
Bridges-Clark Oil Co.'s No. 1 Gay et al, 300 ft. S, 300 ft. E, NW cor. NE NW, Sec. 3-9-12 ..... Drlg. 6-in. plug 3,116 ft; T.D. 3,276 ft.
Bridges-Clark Oil Co.'s No. 1 McWilliams, 330 ft. S, 330 ft. E, NW cor., Sec. 30-10-11 ..... Cmtd. 6⅝-in. 3,116 ft.
R. L. Gay, trustee's No. 7 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 14-7-14 ..... Rig up.
R. L. Gay, trustee's No. 8 Bowman-Hicks Lbr. Co., 330 ft. N, 330 ft. W, SE cor. NW SW, Sec. 18-7-13 .... Derrick.
R. L. Gay, trustee's No. 4 Sabine Lbr. Co., 330 ft. N, 330 ft. E, SW cor., Sec. 13-7-14 ..... Derrick.
G. M. LeGrand's No. 1 A. C. Haley, 1,020 ft. N, 3,300 ft. E, NW cor., Sec. 6-7-12 ..... Flowing S.W; T.D. 2,576 ft; W.O.
Loring Oil Co.'s No. 1 Peavy-Wilson Lbr. Co., 200 ft. S, 330 ft. W, NE cor. SW NE, Sec. 21-6-13 ..... Derrick.
Lohman et als' No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 15-4-11 ..... Derrick.
Paramount O. & G. Co.'s No. 1 Wootems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12 ..... Began drlg. Mar. 17.
Pelican O. & G. Co.'s No. 1 La. Long Leaf Lbr. Co., 315 ft. N, 30 ft. E, SW cor. NW SE, Sec. 4-7-11 .... Began drlg. Mar. 12; cmtd. 12½-in. 103 ft; drlg. 220 ft.
Pelican O. & G. Co.'s No. 1 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor. NE SW, Sec. 1-7-12 ..... Cmtd. 12½-in. 104 ft; drlg. 765 ft.
Ray-Dawes Drlg. Co.'s No. 1 Mansfield Hdw. Lbr. Co., Sec. 36-8-13 (no check) ..... Began drlg. March 10; cmtd. 10-in. 101 ft.
Ruston Drlg. Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor., Sec. 24-7-14 ..... Derrick.
W. F. Lacey et als' No. 1 Knouse, 60 ft. N, 111 ft. W, SE cor. NE SE, Sec. 36-8-13 ..... Rig up.
D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ..... Arranging D.S. test 2,315 ft.
A. H. Tarver's No. 2 Long Bell, 800 ft. N, 800 ft. W, SE cor. SW, Sec. 18-8-13 ..... Drlg. 3,185 ft.

TENSAS PARISH

A. R. Willis et als' No. 1 Curry, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... S.D. 600 ft.

UNION PARISH

Bahan & Bahan's No. 1 J. West, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 33-23-3 ..... D.S. test 2,500 ft.; dry and S.D.; W.D.
Fred Stovall's No. 1 Stovall, 1,820 ft. E, 350 ft. N, SW cor., Sec. 32-23-4 ..... Rig up.

WEBSTER PARISH

T. M. Fuller's No. 1 Monzingo, 200 ft. N, 200 ft. W, SE cor., Sec. 27-18-8 ..... Began drlg. Nov. 10; cmtd. 10-in. 62 ft.

WEST CARROLL PARISH

H. L. Hunt, Inc.'s No. 1 R. E. Brown, NW cor. NW SW, Sec. 4-21-11 ..... Losing returns; arrange set 8-in. 1,100 ft.; T.D. 2,116 ft.
Palmer Corp.'s No. 1-A Marston, 1,320 ft. S, 89 deg., 35 min. W, 1,320 ft. of SE cor., Sec. 11-19-10 ..... Bailing csg; T.D. 2,675 ft.

ARKANSAS

ASHLEY COUNTY

J. D. Marcum Co.'s No. 1 McGarry, 300 ft. W, 100 ft. S. center Sec. 10-19-4 ..... O.W.D.D.; arranging to deepen; T.D. 3,300 ft.

CLEBURNE COUNTY

Cosden Oil Co. of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E, NW cor. SW SE, Sec. 19-9-10 ..... Drlg. blue shale 2,455 ft.
Donnelly-Craver et als' No. 1 Doniphan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. wtr; corrected depth 105 ft.

COLUMBIA COUNTY

Parker et als' No. 1 Franks, 330 ft. S, 330 ft. W, C, Sec. 35-19-22 ..... S.D. 2,335 ft.

DREW COUNTY

McClintock & Goodka's No. 1 Ogles, 920 ft. W, 400 ft. S, NE cor., Sec. 35-13-5 ..... S.D. repairing rig 1,810 ft.

FAULKNER COUNTY

Cold Creek O & G. Co.'s No. 2 Stermer, SE cor. NW SE, Sec. 17-4-13 ..... Began drlg. Dec. 12.

GARLAND COUNTY

Givens et als' No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... Drlg. 3,604 ft.

LITTLE RIVER COUNTY

J. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 .... S.D. 2,335 ft.
McDonald & Shaw's No. 1 W. E. Black, 240 ft. N, 460 ft. W, SE cor. SE NE, Sec. 12-13-28 ..... Tested S.W. 2,016 ft.

LOGAN COUNTY

J. W. Greeson's No. 1 C. S. Parke, 330 ft. N, 330 ft. W, SE cor., Sec. 21-8-24 ..... Cmtd. 6-in. 950 ft; drlg. broken shale 1,325 ft.

MADISON COUNTY

Phillips Pet. Co. and F. S. Craver's No. 1, C, Sec. 11-14-28. Tested 250,000 ft. gas 63 ft; drlg. 1,461 ft.

OUACHITA COUNTY

Artex Oil Co.'s No. 1 M. V. Smith, 330 ft. S, 330 ft. E, NW cor. SE NW, Sec. 31-15-17 ..... S.W. 3,077 ft; drlg. 3,166 ft; T.A. 3,188 ft.

PIKE COUNTY

Theo. Davis, trustee's No. 1 Ruth Wilson, 200 ft. S, 200 ft. W, NE cor., Sec. 25-5-26 ..... S.D; funds; T.D. 713 ft.

POPE COUNTY

Ark.-La. Pipe Line Co.'s No. 1 Crutcher, 330 ft. S, 450 ft. E, NW cor. NE NW, Sec. 14-9-21 ..... T.A. 1,705 ft.
Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE, Sec. 13-9-19 ..... Drlg. 3,235 ft.

PRAIRIE COUNTY

Transcontinental Oil Co.'s No. 1 Louis Novak, 330 ft. E, 330 ft. N, SW cor. SW NE, Sec. 36-2n-6 ..... Reaming to bottom 2,930 ft.

ST. FRANCIS COUNTY

Brownlee Drlg. Co.'s No. 1 Whitted, 110 ft. N, 110 ft. E, SW cor. SE NW, Sec. 28-4-1 ..... S.D.; funds; 300 ft.

UNION COUNTY

Johnson Drlg. Co.'s No. 1 Tate, 300 ft. N and W, SE cor. NE NW, Sec. 14-18-14 ..... Began drlg. March 5; cmtd. 10-in. 69 ft.; drlg. 1,100 ft.
Al-Cal Oil Corp.'s No. 1 Harvey, 660 ft. W, 300 ft. S, NE cor. SW SE, Sec. 1-17-16 ..... S.D.; W.O. 2,770 ft.
E. L. Chapman's No. 1 School, Sec. 9-18-13 ..... Location.
W. M. Coates, trustee's No. 1 McDuffie, Sec. 32-19-17.. T.A. in red beds; T.D. 4,506 ft.
Federal Pet. Co. and Union Sawmill Co.'s No. 1 fee, 330 ft. N, 330 ft. W, SE cor. NW NE, Sec. 9-18-13.. Derrick.
Lion Oil Ref. Co.'s No. 1 Ballard, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 10-18-15 ..... D.S. test 1 ft. sand 3,568 ft. and 3,591 ft; 27 fourbles S.W; arranging retest; T.D. 3,583 ft.
Marine Oil Co.'s No. 1 Simmons, 200 ft. N, 200 ft. W, SE cor. SE NW, Sec. 10-18-13 ..... Drlg. 3,416 ft.
Marine Oil Co's No. 2 Simmons, 300 ft. N, 300 ft. E, SW cor. SE NW, Sec. 10-18-13 ..... Rig up.
Marine Oil Co.'s No. 2-B Winn, 200 ft. S, 200 ft. E, NW cor. NW SE, Sec. 10-18-13 ..... Drlg. 2,975 ft.
Modisette Drlg. Co.'s No. 3 Union Sawmill, 330 ft. S, 330 ft. W, NE cor., Sec. 14-18-14 ..... Location.
Modisette et als' No. 1 Union Sawmill Co., 330 ft. N, Johnson Drlg. Co.'s No. 1 Tate, Sec. 14-18-14 ..... Cmtd. 6⅝-in. 2,204 ft; 10-ft. sand; T.D. 2,226 ft.
Johnson-Gummer Co.'s No. 1 Cargile, Sec. 4-18-15 Coring 3,567 ft.
Simms Oil Co.'s No. 1 G. D. Simmons, 200 ft. S, 200 ft. W, NE cor. SW. Sec. 10-18-13 ..... Derrick.

VAN BUREN COUNTY

Glenn Cole et al, trustees' No. 1 Scanlan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 .... S.D. repairing pump; T.D. 550 ft.
O'Hara & Shetterly's No. 1 Boyd, SE cor. SE NE, Sec. 12-16-32 ..... Spudded Sept., 1928; S.D. 140 ft; resumed drlg. Aug. 25; U.R; T.D. 150 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Trying to kill wtr. flow 2,150 ft; hard sand showing oil 1,637-40 ft.
Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 20-15-32 ..... U.R. 8-in. to T.D. 1,500 ft.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8 ..... Cmtd. 5 3/16-in. 3,500 ft; drlg. 3,605 ft.

EAST TEXAS

CAMP COUNTY

Rogers et als' No. 1 Enfelt, R. M. Montgomery Sur. .... Tested dry 1,870 ft; S.D. 1,920 ft.

MARION COUNTY

R. E. Davidson's No. 1 Susie Chapman, Jackson-Grayson Survey ..... Began drlg. Mar. 10; cmtd. 10-in. 100 ft; drlg. 1,320 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. .... S.D. 2,365 ft.
Shad Harper's No. 1 W. R. Garland, J. Wagley Sur. .... S.D. 1,862 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edward Dean Sur... S.D. 2,182 ft.

SHELBY COUNTY

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 1 McCann, D. G. Green Sur. ..... Drlg. 3,010 ft.
Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur. .. S.D. for orders 3,004 ft.

MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e Shot with 100 qts. and reset 6-in. 2,393 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 ..... Driving 8¼-in. through quicksand; T.D. 1,280 ft.

HINDS COUNTY

Oscar Brown's No. 1 Riverside (formerly Hennessee et als') SE cor. SE SW, Sec. 23-16-5 ..... Set 12½-in. 30 ft; S.D. 1,050 ft.
Jackson O. & G. Co.'s No. 1 Taylor, C. Sec. 35-6-1e ..... Derrick.
Jackson O. & G. Co.'s No. 1 Mayes, Sec. 2-5-1e ..... Estimated 1,000,000 ft. gas 2,000 bbls. wtr.; T.A., T.D. 2,480 ft.
La. G. & F. Co.'s No. 1 Hanis, Sec. 35-6-1e ..... Began drlg. Mar. 15; cmtd. 12½-in. 93 ft.
Love O. & G. Co.'s No. 1 Mendoza, Sec. 11-5-1e ..... Derrick.
Jackson O. & G. Co.'s No. 1 Taylor, center Sec. 35-6-1e.. Derrick.
Mrs. Reeder et als' No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... W.O; T.D. 2,905 ft.

HUMPHREYS COUNTY

E. C. Steele et als' No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 ..... Set 8¼-in. 2,792 ft; T.D. 2,816 ft. sand 2,809-14 ft.; W. O.; T.D. 2,168 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 ..... S.D.; green sand 2,698 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-6-14 .... Derrick.

LAFAYETTE COUNTY

Banks-Goode et als' No. 1 May, 113½ rods S, 26 rods E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

LINCOLN COUNTY

Lincoln O. & G. Co.'s No. 1 Pat Case, NE NE, Sec. 21-8-6 ..... S.D; W.O. 2,221 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D. 2,912 ft; bailer lost in hole.
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Drlg. 2,362 ft.; showing small amount gas; 6-in. 2,314 ft.
Park Bowser et als' No. 1 Cowart, second hole, Sec. 2-12-19 ..... S.D. 30 ft.

RANKIN COUNTY

Gulf Ref. Co.'s No. 1 Rainey, NW NW, Sec. 13-5-1e .... D.S. test 2,510-15 ft; oil and S. W; reaming; to set 9-in.
R. A. More et als' No. 1 Interior Lbr. Co., Sec. 28-6-1e .. S.D. repairs 400 ft.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-15 ..... S.D. 2,475 ft.; 2,350 ft. D.S. in hole; W.O.

YALOBUSHA COUNTY

Carter Oil Co. and J. D. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, C, Sec. 14-11-4 ..... Fishing drill stem; T.D. 2,433 ft.

YAZOO COUNTY

Amerada Pet. Corp.'s No. 1 Doherty, SW SW, Sec. 24-12-2 ..... Drlg. sandy lime 5,183 ft.

ALABAMA

LAMAR COUNTY

Briggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... T.A. 1,740 ft.

LAUDERDALE COUNTY

A. D. Morton et als' No. 10 O'Neal estate, Sec. 8-2s-13w. Rigging up cable tools.

MARION COUNTY

Hobson et als' No. 1 John Clark, SE, Sec. 29-11-14 ..... Derrick pattern.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D; S.W. flow at 1,450 ft.
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... Fishing bailer; T.D. 881 ft.
Oscar Brown's No. 2 Land & Cotton Co., Sec. 25-3-2w... Drlg. 700 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 53)

H. L. Hunt, Inc.'s No. 6 J. W. Peyton, 990 ft. S, 990 ft. W, NE cor. SE, Sec. 25-23-12 ..... Cmtd. 6-in. 3,137 ft; T.D. 3,143 ft.
H. L. Hunt, Inc.'s No. 7 J. W. Peyton, 990 ft. S, 990 ft. E, C, Sec. 25-23-12 ..... Location.
H. L. Hunt, Inc.'s No. 8 J. W. Peyton, 990 ft. E, 330 ft. S, C, Sec. 25-23-12 ..... Rigging up.
H. L. Hunt, Inc.'s No. 9 J. W. Peyton, 330 ft. S, 330 ft. E, C, Sec. 25-23-12 ..... Began drlg. Mar. 15; cmtd. 10-in. 350 ft.
H. L. Hunt, Inc.'s No. 10 J. W. Peyton, 990 ft. S, 330 ft. E, C, Sec. 25-23-12 ..... Began drlg. Mar. 10; cmtd. 10-in. 300 ft; drlg. 500 ft.
La. Pet. Corp.'s No. 2 Bain, 330 ft. S and E, NW cor. SW NW, Sec. 31-23-11 ..... Drlg. 1,500 ft.
La. Pet. Co.'s No. 3 Bain, Sec. 31-23-11 ..... Began drlg. Mar. 8; cmtd. 10-in. 186 ft; drlg. 1,550 ft.
Magnolia Pet. Co.'s No. 1 E. C. Dodson, Sec. 16-23-12.. D.S. test 3,099 ft; 9 fourbles S.W; drlg. 3,183 ft.
Magnolia Pet. Co.'s No. 2 Matlock, 330 ft. S and W, NE cor. SE SW, Sec. 25-23-12 ..... Rig up.
Magnolia Pet. Co.'s No. 1 Roberson, Sec. 26-23-12 ..... 765 ft. S.W. in hole; small S.G; T.D. 3,132 ft.
Magnolia Pet. Co.'s No. 3 Matlock, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 25-23-12 ..... Derrick.
Muslow Oil Co.'s No. 1 Barnette, Sec. 25-23-12 ..... Cmtd. 6⅝-in. 3,135 ft; T.D. 3,-151 ft.
Muslow Oil Co.'s No. 2-A Kilgore, Sec. 31-23-11, (no check) ..... Rig up.
Muslow Oil Co.'s No. 2 Barnett, 1,002 ft. N, 990 ft. W, SE cor., Sec. 25-23-12 ..... D.S. test 2,692 ft.; small show oil; drlg. 2,695 ft.
Muslow Oil Co.'s No. 2-B Kilgore, Sec. 31-23-11 ..... Cmtd. 6⅝-in. 3,110 ft.
Muslow Oil Co.'s No. 3-B Kilgore, Sec. 31-23-11 ..... Cmtd. 6⅝-in. 3,130 ft.
Muslow Oil Co.'s No. 1-C Kilgore, 2,080 ft. N, 1,980 ft. E, SW cor., Sec. 31-23-11 ..... Drlg. cable tools.
Muslow Oil Co.'s No. 1 Mark Myer, 1,980 ft. N, 330 ft. W, SE cor., Sec. 36-23-12 ..... Arranging to deepen; T.D. 3,-088 ft.
Muslow Oil Co.'s No. 2 Peyton, Sec. 30-23-11 ..... Drlg. 2,400 ft.
Muslow Oil Co.'s No. 3 Peyton, Sec. 30-23-11 ..... Cmtd. 6⅝-in. 3,135 ft; arranging test 3,149 ft.
Muslow Oil Co.'s No. 1 Floyd, 990 ft. S, 330 ft. W, C, Sec. 25-23-12 ..... Drlg. 2,600 ft.
Nat. Gas Prod. Co.'s No. 2 U. S. Govt., NW cor. SE NW, Sec. 31-23-11 ..... Cmtd. 6⅝-in. 3,157 ft.
Nat. Gas Prod. Co.'s No. 3 U. S. Govt., 1,520 ft. S, 2,580 ft. E, NW cor., Sec. 31-23-11 ..... Location.
Nat. Gas Prod. Co.'s No. 4 U. S. Govt., 2,440 ft. S, 2,580 ft. E, NW cor., Sec. 31-23-11 ..... Location.
Olsen Bros. and Ingall's No. 1 Pine Woods Lbr. Co., SE cor. NW NW, Sec. 25-23-12 ..... Location.
Phillips Pet. Co.'s No. 1-A Bollinger (formerly Sales & Walker's No. 4 Bolinger), 696 ft. S, 1,120 ft. E, NW cor. SW, Sec. 30-23-11 ..... Perforated 6⅝-in. 3,113-23 ft; 300 ft. oil in hole; W.O.S.R; T.D. 3,247 ft.
Phillips Pet. Co.'s No. 3 Bollinger, 700 ft. E, 265 ft. S, NW cor. SW SW, Sec. 30-23-11 ..... Drlg. 2,400 ft.
Phillips Pet. Co.'s No. 4 Bollinger, NW cor. E½, NW SE, Sec. 30-23-11 ..... Derrick.
Phillips Pet. Co.'s No. 5 Bollinger, 990 ft. E, 226 ft. N SW cor., Lot 16, Sec. 30-23-11 ..... Derrick.
Phillips Pet. Co.'s No. 1 Floyd, 330 ft. S, 330 ft. W center, Sec. 25-23-12 ..... Rig up.
The Texas Co.'s No. 2 Peyton, 990 ft. N, 330 ft. W, SE cor., Sec. 25-23-12 ..... W.O.S.R. 3,195 ft.
The Texas Co.'s No. 4 Peyton, 950 ft. E, 330 ft. N, SW cor., Sec. 30-23-11 ..... Drlg. 2,969 ft.
The Texas Co.'s No. 5 Peyton, 330 ft. N, 330 ft. W SE cor., Sec. 25-23-12 ..... Derrick.
The Texas Co.'s No. 6 Peyton, 330 ft. N, 330 ft. E SW cor., Section 30-23-11 ..... Derrick.
The Texas Co.'s No. 3 Wilkinson, 990 ft. S, 330 ft. E, NW cor., Sec. 31-23-11 ..... Cmtd. 6-in. 3,114 ft; T.D. 3,120 ft.
The Texas Co.'s No. 4 Wilkinson, 330 ft. S, 330 ft. E, NW cor., Sec. 31-23-11 ..... Cmtd. 6-in. 3,130 ft; T.D. 3,138 ft.
The Texas Co.'s No. 5 Wilkinson, 1,470 ft. S, 150 ft. W NE cor., Sec. 36-23-12 ..... Rig up.
Tippett et als' No. 1 Holmes, 200 ft. S, 200 ft. W, NE cor. NE NW, Sec. 36-23-12 ..... Drlg. 2,950 ft.
John Woodley et als' No. 2 L. & A., 990 ft. N, 990 ft. W, SE cor., Sec. 14-23-12 ..... S.D. 3,137 ft.
Woodley et als' No. 1 Roberson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 22-23-12 ..... Rig up.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Taylor Trosper, 2,519 ft. S, 1,293 ft. E, CWL, Sec. 7-16-16 ..... Cmtd. 6-in. 2,814 ft; T.D. 2,919 ft.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 2 Barr, Sec. 30-22-15 (no check) ..... Drlg. 1,100 ft.
Bayou State Oil Corp.'s No. 29 Jolly, 425 ft. W, 775 ft. N, SE cor. NE ..... W.O.S.R. 1,014 ft.

CADDO PARISH—MOORINGSPORT DISTRICT

Falcon Oil Co.'s No. 2 Nunnely, 3,012 ft. N, 3,091 ft. E, SW cor., Sec. 29-20-15 ..... Fishing 6-in. csg.; T.D. 1,985 ft.
Falcon Oil Co.'s No. 3 Nunnelly, 2,832 ft. N, 3,693 ft. E, SW cor., Sec. 29-20-15 ..... Location.

CADDO PARISH—OIL CITY

Gulf Ref. Co.'s No. 25-A Levee Board, 1,520 ft. S, 200 ft. E NW cor., Sec. 34-21-16 ..... Location.
H. M. Matson's No. 1 U. S. Govt., 900 ft. E, 400 ft. S, NW cor. ..... W.O.S.R. 2,292 ft.
Standard Oil Co.'s No. 19 J. J. Hart, 1,305 ft. E, 1,120 ft. S, NW cor., Sec. 34-21-16 ..... Location.
The Texas Co.'s No. 72 Levee Board, 725 ft. N, 210 ft. E, SW cor. SE, Sec. 27-21-6 ..... Drlg. hard sand 1,824 ft.
The Texas Co.'s No. 73 Levee Board, 1,643 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16 ..... Location.

PINE ISLAND

Shreveport Oil Corp.'s No. 4 Hicks, Sec. 32-19-15 ..... Drlg. 6-in. plug; bailing csg; T.D. 2,017 ft.

LA SALLE PARISH—URANIA

Ark. Fuel Oil Co.'s No. 5 Urania, 200 ft. S, 200 ft. E, NW cor. NE SE, Sec. 24-10-1e ..... S.D; repairing rig; T.D. 5,055 ft.
Gulf States Gas Co.'s No. 1 Urania, 250 ft. W, 150 ft. S, NE cor., Sec. 1-10-1e ..... S.D. 1,000 ft.
Hope Oil Co.'s No. 5 Urania, 660 ft. E, 150 ft. S, NW cor. SW SW, Sec. 19-10-2e ..... Derrick.
Kinney, Hardtner & Randall's No. 1 Kinney, SW SW, Sec. 7-10-2e ..... S.D. 1,570 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 3 Feazel, 990 ft. S, 990 ft. W, NE cor, Sec. 3-20-4 ..... Cmtd. 6-in. 3,088 ft.
Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 3-20-4 ..... Location.
J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor., Sec. 18-20-5 ..... S.D.; junked; T.D. 2,737 ft.
La. G. & F. Co.'s No. 26 Crossett, 645 ft. E, 574 ft. S, NW cor. Lot 9, Sec. 33-21-5 ..... Location.
La. G. & F. Co.'s No. 27 Crossett, N 67 deg., 30 ft. E 2,079 ft; N 20 deg. 30 ft. W 594 ft., SW cor. Lot 3, Sec. 33, in Sec. 45-21-5 ..... Location.
Magnolia Pet. Co.'s No. 8 U. S. Govt., 310 ft. S, 410 ft. E, NW cor., Lot 4, Sec. 33-21-5 ..... Cmtd. 10¾-in. 860 ft.
La. G. & F. Co.'s (formerly Nat. Gas Prod. Co.'s) No. 25 Crossett Lbr. Co., 1,444 ft. S, 793 ft. W, NE cor. NW, Sec. 29-21-5 ..... Drlg. 2,352 ft.
J. A. Noe et als' No. 1 Wright, 694 ft. N, 393 ft. W, C, Sec. 27-20-4 ..... Drlg. 6-in. plug; T.D. 2,070 ft.
Southern Carbon Co.'s No. 14 Tensas, 660 ft. N, 660 ft. E, SW cor. NW, Sec. 34-21-4 ..... S.D. on account high wtr; T.D. 2,081 ft.

OUACHITA PARISH

Chauvin Gas Co.'s No. 4 Slagle Johnson, 647 ft. W, 2,303 ft. S, NE cor., Sec. 47-18-4 ..... Began drlg. March 5; cmtd. 12¼-in. 200 ft.; drlg. 350 ft.
Hope Prod. Co.'s No. 2 Fairbanks, 1,876 ft. E, 628 ft. N, SW cor. SE, Sec. 25-20-4 ..... Location.
Hope Prod. Co.'s No. 3 Fairbanks, 1,876 ft. E, 628 ft. S, NW cor. NE, Sec. 36-20-4 ..... Blowing wild, estimated 50,000,-000 ft. gas; T.D. 2,302 ft.
G. E. Jordan's No. 1 Anding, NW NE, Sec. 18-18-15 .... Waiting cmt. to set 2,234-2,480 ft.
Jordan Drlg. Co.'s No. 6 Cole, 1,596 ft. W, 2,388 ft. N, SE cor., Sec. 49, in Sec. 80-18-4 ..... Rigging up.
Jordan Drlg. Co.'s No. 2 Pereboom, 1,207 ft. W, 264 ft. S, C, Sec. 9-18-4 ..... Location.
Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4 ..... Location.
La. Gas & Fuel Co.'s No. 1 Beard, Sec. 46-18-4 ..... Cmtd. 6-in. 3,143 ft.
Magnolia Pet. Co.'s No. 2 fee 401, 660 ft. S, 660 ft. E, NW cor., Sec. 2-18-3 ..... Derrick.
Sho-Van Gas Products Co.'s No. 3 W. Va., 1,980 ft. S and W, NE cor., Sec. 5-18-4 ..... Cmtd. 6-in. 2,145 ft.
Sho-Van Gas Products Co.'s No. 4 W. Va., 1,078 ft. N, 294 ft. W, NE cor., Sec. 49, in Sec. 7 ..... Rig up.
Union Gas Products Co.'s No. 1 Hare, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 22-19-5 ..... D.S. test 2,565 ft; dry; W.O.
United Oil & Nat. Gas Products Co. of La.'s No. 5 Guthrie, 6,396 ft. N, 6,022 ft. W, cor. Secs. 49, 26, and 25, Sec. 49-20-5 ..... Derrick.
United Carbon Co.'s No. 2 Puckett, 660 ft. N, 660 ft. E, SW cor. SW, Sec. 15-19-5 ..... D.S. test 2,538 ft. dry; arranging to deepen.
United Carbon Co.'s No. 4 Spade, 774 ft. S, 2,081 ft. E, NW cor., Sec. 6-18-4 ..... Cmtd. 6-in. 2,143 ft.
United Carbon Co.'s No. 5 Spade, Sec. 35-19-3 ..... S.D; high wtr; T.D. 1,705 ft.
United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 ..... Location.
United O. & N. G. Co.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4 ..... Derrick.

RICHLAND PARISH

Ark.-La. P. L. Co.'s No. 3-B E. A. and F. B. Sartor, 300 ft. N, 330 ft. E, SW cor., Sec. 24-16-5 ..... Cmtd. 9-in. 2,295 ft.
W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 ..... Rig up.
International Gas Products Co.'s No. 1 Minnie La-Grone, 769 ft. N, 858 ft. E, SW cor., Sec. 7-16-7 ... Location.
La. G. & F. Co.'s No. 1 Chapman, 2,497 ft. E, 1,980 ft. S, NW cor., Sec. 36-16-6 ..... Pumping mud to kill blowout; T. D. 2,493 ft.
La. G. & F. Co.'s No. 1-A Mulhein, 1,731 ft. N, 2,242 ft. E SW cor. NW, Sec. 32-17-6 ..... Cmtd. 9-in. 928 ft; drlg. 1,041 ft.
La. G. & F. Co.'s No. 2-C F. B. Sartor, 750 ft. N, 945 ft. E, C, Sec. 20-16-6 ..... Location.
La. G. & F. Co.'s (formerly Nat. Gas. Prod. Co.'s) No. 1-C Sartor, 536 ft. N, 1,333 ft. E, SW cor. NW, Sec. 21-16-6 ..... Cmtd. 5¾-in. 2,300 ft; drlg. lime 2,357 ft.
Palmer Corp.'s No. 1 B. F. Chapman, 3,300 ft. S, 1,330 ft. W, NE cor., Sec. 35-16-6 ..... Derrick.
Palmer Corp.'s No. 1-A Earl, Sec. 2-16-6 ..... Setting 4½-in. csg. with packer 2,500 ft.
Palmer Corp.'s No. 1 Louise Rhymes, 1,335 ft. N, 906 ft. E, SW cor., Sec. 32-17-6 ..... Location.
Palmer Corp.'s No. 7 Rhymes, 660 ft. N, 660 ft. E, SW cor., Sec. 7-16-6 ..... Location.
Palmer Corp.'s No. 9 Rhymes, 733 ft. N, 1,278 ft. E, SW cor., Sec. 4-16-6 ..... Location.
Richland Operating Co.'s No. 2 Traylor, 1,000 ft. E, 477 ft. N, C, Sec. 25-16-6 ..... Location.
Southern Carbon Co.'s No. 1 Hale, 660 ft. N, 760 ft. W, SE cor., Sec. 16-16-6 ..... Arranging to plug back; T.D. 2,-460 ft.
Southern Carbon Co.'s No. 1 Lindow, 3,300 ft. W, 1,320 ft. S, NE cor., Sec. 16-16-6 ..... Drlg. 2,031 ft.
Southern Carbon Co.'s No. 1 McCoy, 1,980 ft. E, 3,300 ft. S, NE cor., Sec. 16-16-6 ..... Cmtd. 6-in 2,280 ft.
Southern Carbon Co.'s No. 1 W. E. Landers, 1,980 ft. N, 1,220 ft. E, SW cor., Sec. 10-16-6 ..... Derrick.
Southern Carbon Co.'s No. 1 L. S. Mulhern, 1,016 ft. W, 200 ft. S, NE cor. NW, Sec. 19-16-6 ..... Derrick.
United Carbon Co.'s No. 1 W. M. Hallock, 1,980 ft. N, 660 ft. W, SE cor., Sec. 2-16-6 ..... Derrick.
United Carbon Co.'s No. 2 Mulhein, 660 ft. S, 750 ft. E NW cor. NW, Sec. 30-16-6 ..... Derrick.

SABINE PARISH—PLEASANT HILL

Ark. Fuel Oil Co.'s No. 4 Horne, 370 ft. S, 450 ft. W, NE cor. SW, Sec. 33-10-12 ..... Drlg. 3,140 ft.
Bahan & Ryan's No. 1 Mischel, 1,215 ft. N, 1,169 ft. W, SE cor. SW, Sec. 32-8-12 ..... Location.
Hatcher et als' No. 1 Moore heirs, 300 ft. N, 300 ft. E, C, Sec. 32-10-13 ..... Derrick.
Magnolia Pet. Co.'s No. 2 McLeroy, 230 ft. S, 200 ft. W, NE cor. W½ SE SW, Sec. 33-10-12 ..... Cmtd. 8⅛-in. 3,110 ft.

SABINE PARISH—ZWOLLE

Ark. Fuel Oil Co.'s No. 1 Nunn, 330 ft. N, 330 ft. E, C, Sec. 32-8-12 ..... Cmtd. 6⅝-in. 2,160 ft.
Air Lift Oil Co. and Root Refineries, Inc.'s No. 1 Leone, 150 ft. S, 150 ft. W, NE cor. S½ SE SW, Sec. 32-8-12 ..... Began drlg. Mar. 14; cmtd. 10-in. 102 ft; drlg. 840 ft.
Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 3 Bowman-Hicks, 330 ft. S, 330 ft. W, NE cor. SE, Sec. 34-8-12 ..... Cmtd. 6⅝-in. 2,339 ft; T.D. 2,-357 ft.
Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 4 Bowman-Hicks, 330 ft. N, 330 ft. W, C, Sec. 34-8-12 ..... Derrick.
Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 5 Bowman-Hicks, 900 ft. S, 1,400 ft. W, C, Sec. 34-8-12 ..... Cmtd. 8¼-in. 2,355 ft.
Loring Oil Co.'s (formerly Benedum & Trees') No. 6 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor. SE, Sec. 32-8-12 ..... Drlg. 1,736 ft.
Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) (was R. L. Gay, trustee's) No. 2-A Bowman-Hicks Lbr. Co., 200 ft. S, 200 ft. W, NE cor. NE NW ..... 200 ft. oil in hole; T.D. 2,535 ft.; arranging to deepen.

The Seal of Security

An Insurance Service Organization

310 Philtower
TULSA
2-6116

1013 Perrine Bldg.
OKLAHOMA CITY
2-1138

The Frates Creed

I PLEDGE MYSELF:

To get some new business today, for it is only through the income derived from a large volume of business that a complete service organization may be maintained.

To keep ahead of my work and perform my duties with efficiency and dispatch because customers do not appreciate inefficiency and delay in handling the routine matters pertaining to their business.

To render such service as falls to me with the same sincerity and enthusiasm that I would exercise were each specific case my only claim on success. Laxity and insincerity destroy confidence.

To follow the "Golden Rule" in my attitude toward my firm and in my service to our customers.

To preserve by my actions the reputation of the firm because no organization can enjoy a higher position in the community than its representatives, and I, as a representative, must so conduct myself that I do not jeopardize this position.

(This pledge has been signed by each member of the Frates organization.)

Loring Oil Co.'s (formerly Benedum & Trees') No. 1 Sabine Lbr., 330 ft. N and E, C, Sec. 34-8-12 ..... Drlg. 2,300 ft.
Loring Oil Co.'s (formerly Benedum & Trees') No. 7 Bowman-Hicks, 330 ft. S and W, NE cor. NW, Sec. 34-7-12 ..... Drlg. 1,585 ft.
Loring Oil Co.'s No. 8 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SE, Sec. 33-8-12 ..... Derrick.
G. H. Broderick's No. 1 Bolin, Sec. 31-8-12 (Zwolle Townsite) ..... Rig up.
Broderick & Calvert's No. 1 Sabine Lbr. Co., 150 ft. N, 150 f., W, SE cor. SE SW, Sec. 31-8-12 (Zwolle Townsite) ..... Derrick.
R. L. Burch's No. 1 Sabine Lbr. Co., Sec. 31-8-12 ..... Began drlg. Mar. 18.
Joe Burnham et als' No. 1 Bolin, 200 ft. N, 408 ft. E, SW cor. SW NE, Sec. 31-8-12 ..... Began drlg. Mar. 9; cmtd. 10-in. 101 ft; drlg. 1,380 ft.
Davis & Tyson's No. 1 Neville-Roberts, 300 ft. N, 275 ft. W SE cor. NW SW, Sec. 31-8-12 (Zwolle Townsite) .. Began drlg. Mar. 12; cmtd. 10-in. 101 ft; drlg. 605 ft.
Dixie Oil Co.'s No. 1 Nunn, 330 ft. N, 85 ft. W, C, Sec. 32-8-12 ..... Drlg. 1,460 ft.
Dooley & Howard's No. 1 Williams, Sec. 31-8-12 ..... Rig up.
R. L. Gay's No. 7 Bowman-Hicks, Sec. 14-7-14 ..... Began drlg. Mar. 17; cmtd. 10-in. 44 ft; rig up.
R. L. Gay's No. 8 Bowman-Hicks, Sec. 18-7-13 ..... Derrick.
R. L. Gay's No. 4 Sabine Lbr. Co., Sec. 13-7-14 ..... Began drlg. Mar. 18.
Glassell & Merren's No. 1 Thomas, Lot 13, Blk. 3 (Zwolle Twp.), Sec. 21-8-12 ..... Drlg. 1,350 ft.
W. G. Gray, trustee's No. 1 Knowlton, 200 ft. S, 330 ft. W, NE cor. NW NE, Sec. 6-7-12 ..... Cmtd. 6⅝-in. 2,197 ft.
G. A. Henshaw et als' No. 1-A Sabine Lbr. Co., 200 ft. N, 760 ft. E, SW cor. SE NE, Sec. 31-8-12 ..... Began drlg. Mar. 12; cmtd. 10-in. 101 ft; drlg. 840 ft.
G. A. Henshaw et als' No. 2-A Sabine Lbr. Co., 200 ft. N and E, SW cor. SE NE, Sec. 31-8-12 ..... Drlg. cable tools 2,197 ft.
G. A. Henshaw et als' No. 3-A Sabine Lbr. Co., 766 ft. N, 200 ft. E, SW cor. SE NE, Sec. 31-8-12 ..... Location.
G. A. Henshaw et als' No. 1-B Sabine Lbr. Co., 150 ft. S and E, C, Sec. 31-8-12 ..... Drlg. 1,850 ft.
C. L. Jett, trustee's No. 1 Jones, 150 ft. C, Sec. 31-8-12.. Began drlg. Mar. 3; cmtd. 10-in. 100 ft; S.D.
Herbert Oil Co.'s No. 1 Noble, 750 ft. S, 1,250 ft. E, NW cor. SW, Sec. 31-8-12 ..... Derrick.
F. M. Hood's No. 1 Winston, 460 ft. S, 290 ft. E NW cor., Sec. 31-8-12 ..... Derrick.
W. F. Lacy et als' No. 1 Knouse, Sec. 36-8-13 ..... Began drlg. Mar. 12; cmtd. 10-in. 100 ft; drlg. 800 ft.
Lide et als' No. 2 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. NW SE, Sec. 31-8-12 ..... 1,200 oil in hole; set 2-in. tubing and packer; would not flow; W.O.S.R; T.D. 2,224 ft.
Lloyd Oil Corp.'s No. 1 Barnett, Sec. 31-8-12 (Zwolle Townsite) ..... Rig up.
O'Brien Bros.' No. 1 Colquitt, 330 ft. S and E, NW cor. SW, Sec. 32-8-12 ..... Cmtd. 6⅝-in. 2,164 ft; tested dry at 2,190 ft. and 2,215 ft; drlg.
Ohio Oil Co.'s No. 3 Bowman-Hicks, 330 ft. S and W, NE cor. SE SW, Sec. 33-8-12 ..... Cmtd. 6⅝-in. 2,400 ft.
Ohio Oil Co.'s No. 4 Bowman-Hicks, 330 ft. N and E, SW cor. NW SW, Sec. 35-8-12 ..... Cmtd. 6⅝-in. 2,265 ft; T.D. 2,280 ft.
Olsen Bros.' No. 1 Ferguson, 330 ft. N, 330 ft. E. SW cor. NW SE, Sec. 33-8-12 ..... Derrick.
Olsen Bros.' No. 1 Keeler, SW cor. SW SE, Sec. 27-8-12.. W.O.S.R.
Olsen Bros.' No. 1 Leone, 150 ft. N, 250 ft. E, SW cor. SW NW, Sec. 32-8-12 ..... W.O.S.R; 400 ft. oil in hole; T.D. 2,575 ft.
Philp Bros.' No. 1 Dow, Lot 1, Blk. 18, Zwolle Townsite, Sec. 31-8-12 ..... Derrick.
Ray-Dawes Drlg. Co., Sec. 36-8-13 ..... Began drlg. Mar. 10; cmtd. 10-in. 101 ft; drlg. 975 ft.
Ruston Drlg. Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. W, NE cor., Sec. 4-7-12 ..... 400 ft. oil in hole; W.O.S.R; T.D. 2,640 ft.
Ruston Drlg. Co.'s No. 1-A Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SW, Sec. 35-8-12 ..... Cmtd. 6⅝-in. 2,330 ft.
Ruston Drlg. Co.'s No. 2-A Bowman-Hicks Lumber Co., Sec. 35-8-12 ..... Derrick.
Sabine Lumber Co.'s No. 1 Fee, 150 ft. N, 150 ft. W center, Sec. 31-8-12 ..... Began drlg. Mar. 18.
Sabine O. & G. Co.'s No. 1 Anderson, 200 ft. N, 200 ft. E, SW cor. SW NW, Sec. 19-18-13 ..... Tested S.W. 2,603 ft; cmtng. bottom.
C. E. Simmons' No. 1 Bolin, 116 ft. E, 126 ft. N, C, Sec. 31-8-12 ..... Cmtd. 6⅝-in. 2,140 ft.
C. E. Simmons' No. 1 Leach, 435 ft. W, 113 ft. N SE cor. SW NW ..... Location.
W. S. Smith et als' No. 1 Colquitt (Zwolle Townsite), 500 ft. S, 480 ft. E NW cor. SW NE, Sec. 31-8-12 .. Derrick.
W. S. Smith et al's No. 1 Henderson, 200 ft. S, 300 ft. E NW cor. SE SE, Sec. 31-8-12 ..... Derrick.
W. S. Smith et als' No. 1 Williams (Zwolle Townsite), 804 ft. N, 40 ft. W SE cor. SW NE, Sec. 31-8-12... Rig up.
Standard Oil Co.'s No. 1 L. N. Nunn, 990 ft. S, 330 ft. E, C, Sec. 32-8-12 ..... Cmtd. 6⅝-in. 2,158 ft.
Stovall Drlg. Co.'s No. 1 Lefkovitz, 247 ft. N, 250 ft. W, SE cor. N½ SE NW, Sec. 33-8-12 ..... Bailed dry 2,618 ft; arranging to deepen.
A. H. Tarver's No. 1 Sabine State Bank, 250 ft. N, 250 ft. W, C, Sec. 27-8-12 ..... 250 ft. oil in hole, bailing; T.D. 2,668 ft.

UNION PARISH

United Carbon Co.'s No. 1 McInnis, 660 ft. N and E, SW cor. SE, Sec. 19-20-4e ..... Cmtd. 6-in. 2,098 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Bateman et als' No. 3 Womble, 200 ft. S, 660 ft. E, NW cor. NW SW, Sec. 1-22-11 ..... W.O.S.R; 800 ft. fluid; T.D. 2,704 ft.
Donohoe O. & G. Co.'s No. 1-B W. B. Roseberry, 250 ft. S, 250 ft. E, C, Sec. 19-23-9 ..... Rig moved; hole abd. 104 ft.
Pat Hudson's No. 1 B. L. Slack, 330 ft. W, 330 ft. N, SE cor. NW, Sec. 36-23-11 ..... Arranging to test 4-ft. sand; T. D. 2,741 ft.
Liggett et als' No. 1 Slack, 150 ft. N, 366 ft. W, SE cor. SW SE, Sec. 36-23-11 ..... Rig up.
Magnolia Pet. Co.'s No. 2 Denman, 100 ft. N, 160 ft. W, SE cor. NE NW, Sec. 1-22-11 ..... W.O.S.R; T.D. 2,749 ft.
Magnolia Pet. Co.'s No. 3 Scoggins, 165 ft. N, 230 ft. W, SE cor. SW NW, Sec. 1-22-11 ..... Derrick.
Mt. Vernon Oil Co.'s No. 3 Pardee, 200 ft. S, 1,500 ft. E, NW cor. NE SW, Sec. 3-22-11 ..... Began drlg. Mar. 13; drlg. 200 ft.
Merritt & Merritt's No. 1 Boucher, 200 ft. N, 200 ft. E, SW cor. SE SE, Sec. 17-23-11 ..... D.S. test 2,705-08 ft; 17 fourbles oil; arranging to cmt. csg.

ARKANSAS

JOHNSON COUNTY—CLARKSVILLE

Ark. La. P. L. Co.'s No. 1 Patterson, 1,020 ft. S, 2,570 ft. E, NW cor., Sec. 14-10-24 ..... Fishing slip; T.D. 2,900 ft.

NEVADA COUNTY

Roy Davis et als' No. 1 Chas. Henry, 1,130 ft. N, 1,120 ft. W, SE cor., Sec. 10-12-20 ..... Rig up.
C. F. Steele's No. 1 E. W. Groves, Sec. 21-14-20 ..... Shut down.

OUACHITA COUNTY—MOUNT HOLLY DISTRICT

McDonald Bros.' No. 2 Wilson, 700 ft. S, 275 ft. W, NE cor. NW SW, Sec. 25-15-18 ..... Drlg. lime 2,615 ft.

OUACHITA COUNTY—SMACKOVER

J. D. Wingfield's No. 1 Martin, SW cor., Sec. 26-15-16 Set 6⅝-in. 2,085 ft; tested little oil and S.W; W.O; T.D. 2,115 ft.

OUACHITA COUNTY—STEPHENS

Magnolia Pet. Co.'s No. 2 Grayson, 150 ft. N, 200 ft. W, SE cor. NE, Sec. 21-15-19 ..... Cmtd. 8⅛-in. 1,478 ft.; T.D. 1,480 ft.

UNION COUNTY—CHAMPAGNOLLE

O. W. Estes' No. 1 Bates, 200 ft. N, 200 ft. E, SW cor., Sec. 13-17-14 ..... Derrick.

UNION COUNTY—EL DORADO

H. L. Hunt's No. 6 Pratt, 150 ft. N, 330 ft. E, SW cor. NE NE, Sec. 7-18-15 ..... Running sand pump; T.D. 2,214 ft.
H. L. Hunt's No. 1 Norris (formerly reported Ark. Drlg. Co.'s No. 1 Norris), Sec. 17-18-12 ..... Abd. S.W. 3,400 ft.; arranging to deepen.
Malloy & Co.'s No. 4 Goodwin, 300 ft. N, 300 ft. E, SW cor. NE NE, Sec. 36-17-16 ..... Cm.d. 6⅝-in. 2,186 ft.
Malloy & Co.'s No. 1 Murphy, Sec. 1-18-16 ..... Rig up; W.V.
Malloy & Co.'s No. 3 Robertson, NE cor. S½ SW NE, Sec. 6-18-15 ..... Location.
Rice et als' No. 1 W. Ralty, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Spudded July 18; cmtd. 10-in. at 92 ft.
Weisinger & Ball's No. 1 Rogers, 1,014 ft. N, 150 ft. E. SW cor. E½ SW SE, Sec. 31-17-15 ..... Drlg. out cmt; T.D. 2,170 ft.

UNION COUNTY—SMACKOVER

E. L. Chapman's No. 2 Bradley, 330 ft. N, 330 ft. E, SW cor. Lot 3, NW, Sec. 3-16-16 ..... 500 ft. fluid in hole; W.O.S.R.; T.D. 2,028 ft.
E. L. Chapman's No. 1 Epps, 330 ft. S, 330 ft. W NE cor. SE NE, Lot 7, Sec. 3-16-16 ..... Rig up.
Lion Oil Ref. Co.'s No. 1 James, CWL, Lot 2, NW, Sec. 6-16-15 ..... T.A. 2,018 ft.

EAST TEXAS

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 11 Werner, 1,850 ft. S, 1,052 ft. W, NE cor. E. F. Mitcheson Sur. ..... Cmtd. 7-in. 3,208 ft.
Bahan & Bahan's No. 1 Tom Hill, 150 ft. N, 2,315 ft. E. SW cor. E. F. Mitcheson Sur. ..... Drlg. 2,030 ft.
Calatex O. & G. Co.'s No. 3 Caldwell, 243 ft. S, 1,034 ft. W, SE cor. John Womack Sur., in Jas. Shadoin Sur. ..... S.D; W.O. 1,072 ft.
Magnolia Pet. Co.'s No. 2 G. C. Tiller, Jane Thorpe Sur.. Cmtd. back 3,525-2,292 ft; cmtd. 4½-in.
Magnolia Pet. Co.'s No. 6 G. C. Tiller, 393 ft. S, 1,990 ft. E, NW cor. Jane Thorpe Sur. ..... Plugged back from 3,425 to 2,389 ft; waiting cmt. to set.
Nat. Gas Prod. Co.'s No. 8 Roquemore, B. C. Jordan Sur.. Drlg. 4,500 ft.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 56)

BROOKS COUNTY

Amos Dinn, trustee's No. 3 Garcia-Ramos, Share B-1, Las Mestenas y Gonzales grant, 1,300 ft. S line, 2,325 ft. W line of Share B-1 ..... T. D. 2,050 ft.; abandoned; dry in shale.
Humble Oil & Ref. Co. and Shell Pet. Corp.'s No. 1 Singer, Alta Verde Subd., 2,500 ft. S and N line, 333 ft. W and E line of Section 312 ..... T. D. 3,679 ft.; coring sand.

CALDWELL COUNTY

W. E. Allaun and Calco Pet. Co.'s No. 1 Martin..... T. D. 2,920 ft.; preparing to shoot.
Keen & Malcolm's No. 1 Mollie McNeal, George C. Kimball Sur., 2,500 ft. to W line, 860 ft. to N line, 1 mile S from old Luling Field ..... T. D. 2,190 ft.; drlg. in chalk.
S. H. Cargill's No. 1 B. Lynch, 150 ft. from S and E lines 50-ac. tract, in the B. Benton Sur. ..... T. D. 1,200 ft.; drlg. in shale.
G. R. McIntire's No. 1 J. G. Towns, in the I. Weldon Sur., 4,900 ft. to NE line, 1,350 ft. to SE line of Sur.. T. D. 2,630 ft. in chalk; shut down.
Trinity Drillers' No. 1 McMullen, 2,125 ft. from NE line, 150 ft from NW line of Sur., Gibson Betty Sur..... T. D. 1,850 ft.; shut down.

DEWITT COUNTY

Gibson & McIntyre's No. 1 William Van Roeder..... T. D. 1,480 ft.; shut down.
H. T. Roe's No. 1 Leinhardt ..... T. D. 1,800 ft.; working over machinery to start up.

DIMMITT COUNTY

Texas Fuel Gas Co.'s No. 1 City Nat'l Bank (Laxon).... Dropped from reports until work is resumed.

DUVAL COUNTY

T. W. Callahan and W. M. Howard's No. 1 J. M. Luby, 3,960 ft. N line, 3,960 ft. W line Sur. 24 ..... Moving on.
National Oil Co.'s No. 2 Ball, Agua Poquita Sur., Blk. 3.. T. D. 3,568 ft.; drlg.
F. P. Zoch's No. 1 King, Blk. 25, Hoffer and Smith Subd., W. R. King ranch, Diego Hinijosa grant, 660 ft. N line, 660 ft. E line ..... T. D. 4,011 ft.; abandoned.
Southern Oil Co.'s No. 1 Welder Wood, Sur. 215..... T. D. 750 ft.; standing waiting on water.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 330 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... Location.
Griffith's No. 1 Wardlaw, 150 ft. from S line, 1,505 ft. from Sec. 60, Blk. US, J. J. Clift Sur. ..... T. D. 3,000 ft.; shut down, contract depth.

FRIO COUNTY

Frank B. LeFeure's No. 1 H. W. and R. L. Eschenburg, Edward Galligher Sur. No. 789, 3,980 ft. W of SE cor. of Edward Galligher Sur. No. 788 and 1,320 ft. S of N line of Edward Galligher Sur. No. 789..... T. D. 2,200 ft.; drlg. Taylor marl.
Walton & North's No. 1 Trebble, 150 ft. N line, 150 ft. E line, Sec. 64, in the Henry Castro Sur. ..... T. D. 1,000 ft.; shut down.

FAYETTE COUNTY

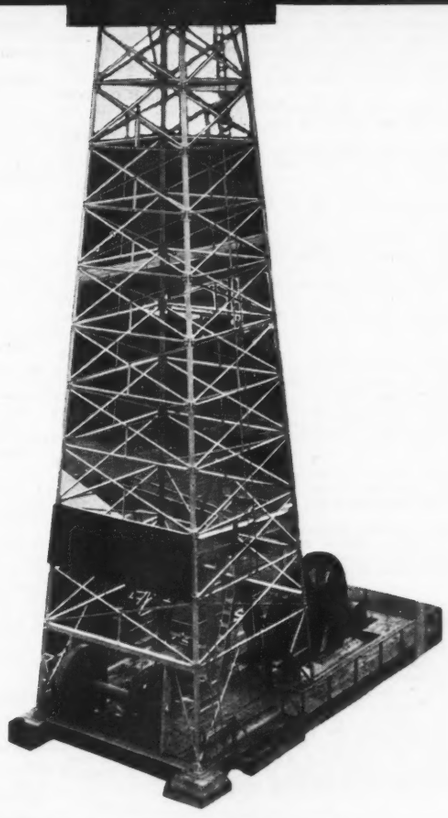
Kelly et al's No. 1 E. M. Burke, in the C. J. A. Weaver Sur. ..... T. D. 488 ft.; shut down.
Moore et al's No. 1 Kerr, 250 varas S of CNL of M. Muldoon lease ..... T. D. 2,485 ft.; shut down.
Muldoon Oil Co.'s No. 1 J. A. Kerr, 2,900 ft. from S. 3,250 ft. from W of M. Muldoon Sur., 2 miles W of Muldoon ..... Spudded in.

GOLIAD COUNTY

Wm. F. Morgan's No. 1 George Ray, in Pedro Trevano Sur., 150 ft. from SE and NW line of George Ray 627-ac. tract ..... T. D. 3,665 ft.; drlg. in gumbo.
Humble Oil & Ref. Co.'s No. 1 Lackey & Weldon, 2,000 ft. from SE and SW lines of the Lackey & Weldon 1,000-ac. tract out of the most SW cor. thereof, in the Javiano Gomez Sur. ..... Preparing to set surface csg.

GONZALES COUNTY

Acme Oil & Royalty Corp.'s No. 1 Weber, Thomas Wright Sur. ..... T. D. 2,375 ft.; setting 1,900 ft. 10-in. csg.
Fitzsimmons & Perrinot's No. 1 Z. Huber, 2,100 varas from NW line, 1,450 varas from NE line (river) of survey, 2¾ miles SE of Darst Creek, in Stephen Smith Sur. ..... T. D. 2,565 ft.; drlg. in hard shale.
Alice R. Garrett's No. 1 W. H. Cardwell, 150 ft. from SW line, 1,650 ft. from SE line of Sur., 12 miles S from Gonzales, in the Byrd Lockhart Sur. ..... Spudded and shut down.
Finnell & Elam's No. 1 J. F. Robinson, 2,000 ft. N line, 4,420 ft. E line, in the J. H. Livergood, 2½ miles NE from Waelder ..... Rigging up.



THE KM CO Derrick stands as nearly like it were formed from a solid piece of steel as special structural methods can make it. Milled ends on each leg give it full bearing on the leg below. Gusset plates at all leg splices are of one-piece, special quality flanging steel and inner splice angles are milled to fit the fillet of the derrick leg —insuring close-fitting, rigid construction. One size bolt for all connections. Legs are uniform and interchangeable, providing speedy and economical erection. A.P.I. Specifications are the basis of all design.

Coming to the oil world as a new offering from KM CO, this superior derrick is quickly being given a place among the many popular products designed and advanced by the men of KM CO during the past twenty-five years.

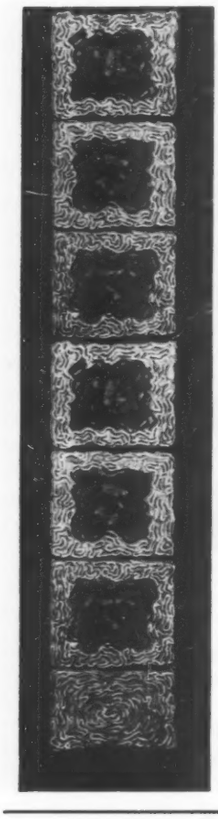
PRODUCTS

Steel Derricks, Rig Irons, Bull Wheels, Calf Wheels, Band Wheels, Crown Blocks, Tug Wheels, Sand Reels, Steel Tankage, Floating Roofs, Tank Fittings, Refinery Equipment, Steel Plate Construction.

THE KIRK-MORROW IRON WORKS COMPANY
IOLA, KANSAS

Sales Offices: Hunt Bldg., Tulsa, Okla.; Magnolia Bldg., Dallas, Texas; Central Bldg., Wichita, Kans.
30 CHURCH ST., NEW YORK, N. Y.

LIKE "BALLOONS" ON RODS AND SHAFTS



THE New Durametallic Elastic Core Packings (patents pending) are like balloon tires to your rods and shafts.

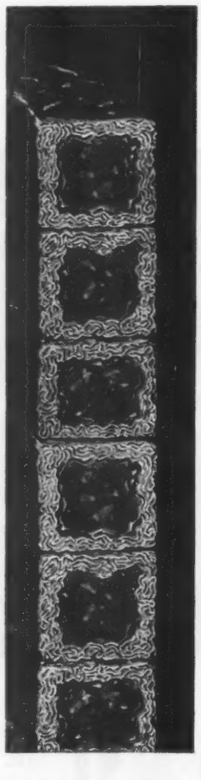
As balloons cushion shocks and neutralize destructive vibration, so do these new type packings reduce wear and tear, both on themselves and on the rods and shafts as well.

As balloons exceed the mileage of high pressure tires, so Durametallic Elastic Core Packings last longer with less attention than old style packings.

NEXT TO GOOD SHAFTS
DURAMETALLIC PACKINGS
ARE MOST IMPORTANT

These new Durametallic Packings are readily available in either spirals or rings sets, in sizes to fit any stuffing box and in grades suitable to pack against any condition throughout the production or refining end of the petroleum industry.

Write, wire, or phone the nearest branch.



DURAMETALLIC CORPORATION
KALAMAZOO, MICHIGAN

Durametallic Packing Co., 405 Equity Bldg., Oklahoma City, Okla.
Durametallic Corporation, 35 E. Wacker Drive, Chicago, Ill.
Universal Packing Corp., 108 Smithfield St. Pittsburgh, Pa.
Durametallic Corporation, 308 W. 10th St., Los Angeles, Calif.

Sullivan Structure Drill Cores
6955 feet, moves 14 times, in month

One structure testing record after another is being broken by the Gypsy Oil Company with Sullivan Structure Diamond Drills.

First, it was 5702 feet, fourteen moves in one month, for one of their Sullivans.

Then came a six months' record of 25,610 feet and 60 moves.

Now it's nearly 7000 feet, in fourteen holes, in one month.

Sullivan Structure Diamond Drills define trends and determine sub-surface "highs" without guess work. They will show you the favorable well locations of one or two whole townships, for the cost of a single wildcat.

Send the coupon for full information.

Use this coupon

I am interested in Sullivan Diamond Drill for
☐ Structure drilling ☐ Deep tests
☐ Drilling against gas pressure

Name ----------

Address ----------

SULLIVAN MACHINERY CO.
825 Wrigley Bldg., Chicago

Sullivan "40" Mounted Core Drill driven by 29 H.P. Buda gasoline engine

SULLIVAN

Agent for Oklahoma and Kansas: GEORGE E. FAILING, Garber and Wichita

GUADALUPE COUNTY

Trinity Drillers et al's No. 1 Wm. Harboth (212-ac.), 1,000 ft. from NE line, 4,500 ft. from NW line of the Robert Hall Sur. ..... T. D. 2,642 ft.; dry; abandoned.

Turman et al's No. 1 St. Charles, 150 ft. N line, 300 ft. from W line of Sur., 5 miles SW of Grayburg's No. 1 Wells, SE cor. of county, in the J. A. Miller Sur. ..... T. D. 3,680 ft.; drlg. in chalk.

Trinity Drillers' No. 1 J. M. White, 975 ft. from NE line, 750 ft. from SE line of 166-ac. farm, in the Mich Miller Sur. ..... Derrick (corrected).

HAYS COUNTY

John H. Foster, trustee's No. 2 W. G. Barber, 7 miles SE of Buda ..... Dropped from reports until work is resumed.

JIM WELLS COUNTY

E. W. Ogden's No. 1 G. Farris, M. Perez Sur. ..... T. D. 2,615 ft.; shut down.

KARNES COUNTY

Ruby & Claypool's No. 1 Tom V. Zepeda Sur., 850 ft. N line, 1,600 ft. E line ..... T. D. 2,838 ft.; drlg.; top of Jackson 2,129 ft.

Hewitt et al's No. 1 H. N. Matula, 450 ft. from E and center of NW and SE lines of 125-ac. farm, in the Victor Blanco Sur. ..... Moving in material.

Mundine Investment Co.'s No. 1 A. D. Wilburn, C of 143 ac. in H. K. Hardy Sur., 3 miles SE from Dunge.. Location.

Hurador Oil Co.'s No. 1 W. E. Porter ..... T. D. 3,650 ft.; drlg.; now Dr. Hewitt et al's.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... T. D. 680 ft.; shut down for repairs.

Seaboard Oil & Gas Co.'s No. 1, SW cor. of Sur. in the Miguel de Toro Sur., 3 miles N from Sisterdale..... T. D. 150 ft.; drlg. in lime.

Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale ..... T. D. 410 ft.; drlg. in lime (red beds).

Sterling's No. 1 Willie Werner, 2 miles NW from Borgett's No. 1 Haag ..... T. D. 914 ft.; shut down; pump installed but not pumping.

KERR COUNTY

Mashe & Tunstill's No. 1 Love Ranch, 1,000 ft. from W line of Sec. 1,594, 100 ft. S of S line of Sec. 1,597, in the G.C.S.D.&R.G.N.G. Sur. ..... Moving in.

KLEBERG COUNTY

Bowen-Sarles' No. 1 Robert H. Simmons, Sec. 7, King Subd., 3 miles W from Ricardo ..... T. D. 415 ft.; standing.

KINNEY COUNTY

Lloyd Oil Co.'s No. 1 G. B. Moore, Sur. 117 ..... T. D. 3,000 ft.; producing sulphur water.

Magnolia Petroleum Co.'s No. 1, SE cor. of Baldz Sur., near S.P.R.R., close to Blume test on Wardlow ranch, W part of county, 2½ miles from Blume..... Location.

A. Blume et al's No. 2 Herbst, 1,731 ft. W and S lines of Sur., in the Poindexter-Burns Sur. ..... Spudded in.

Mardon Oil Co.'s No. 2 Jim Clamp, in the John Winter Sur. No. 346, Near No. 1 ..... Spudded in.

LASALLE COUNTY

Salt Lake City Pet. Co.'s No. 1 Beckwith, Sur. 17, 150 ft. S line, 150 ft. E line ..... T. D. 2,760 ft.; standing.

LAVACA COUNTY

McElreath & Suggett's No. 1 Julius Heinshohn, 361 ft. to E, 523 ft. to S line of farm, in the G.W.&W.H. Sur. ..... Derrick.

LEE COUNTY

Byrd et al's No. 1 H. L. Bastle, 1,200 ft. N and 1,000 ft. E of 80-ac. tract of Wm. Johnson ..... T. D. 3,612 ft.; shut down; hole full of water.

Texas-Louisiana Carbon Corp.'s No. 1 Bryan, in the S. F. Austin Sur., 1,200 ft. N and W of 1,200-ac. farm.. T. D. 3,380 ft.; drill stem stuck.

Todor Oil Corp.'s No. 1 H. Zsesch, in the J. Meeks Sur., 150 ft. N and 900 ft. W of S. Meeks Sur. ..... T. D. 2,000 ft.; shut down.

LIVE OAK COUNTY

O'Neil & Catlett's No. 1 Smith, 900 ft. SW line, 150 ft. NW line ..... T. D. 4,512 ft.; shut down; cored dry sand at 4,512 ft.

Houston Oil Co.'s No. 1 R. Boothe, 3,000 ft. from W line, 300 ft. S line, in the M. B. Kilvin Sur. ..... Moving in material.

Dr. J. K. Rowan Co.'s No. 1 Lynne Ranch, 171 ft. W of George West ..... Location.

Simmons Oil Co.'s No. 1 Richard Coquat, in James C. Hill Sur., 2,250 ft. to S line, 1,750 ft. to E line, 7 miles NE of Oakville ..... T. D. 4,012 ft.; shut down; awaiting orders.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,455 ft. from S, 320 ft. from W of Sec. 116, Blk. 7, I.&G.N. Sur..... T. D. 750 ft.; drlg. in shale.

Rycade Oil Corp.'s No. 5 Chittim ..... T. D. 3,442 ft.; standing; hole full sulphur water.

Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ..... T. D. 2,155 ft.; drlg. in lime.

Rycade Oil Corp.'s No. 3 Chittim, Blk. 7, Sur. 116, H.& G.N., 175 ft. N of No. 1, 10 ft. W, 225 ft. S line..... T. D. 6,636 ft.; shut down for orders.

MEDINA COUNTY

Pat Armstrong's No. 1 C. W. Butts, in George C. Hanson Sur. ..... T. D. 1,102 ft.; shut down.

Pan American Pet. Co.'s No. 1 Antoine Hart, in Harrison Sur. No. 799, 15 miles S from Hondo ..... Laying gas line to rig.

Donaldson Oil & Dev. Co.'s No. 2 Adams Co., James Hillenmeyer No. 25 Sur., 500 ft. to E line of Sur., 150 ft. to S line of N half of Sur. ..... Rig up.

F. E. Tegler's No. 6 J. P. Nixon, NW cor., J. J. Durst Sur. No. 14 ..... Location.

Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of Sur., 478.6 miles W from Devine..... Rigging up.

Pearson Oil Co.'s No. 4 Mangold, 1,600 ft. W of E line, 1,800 ft. N of S line of Sur., in the I. S. Palmer Sur. No. 20, south from Noonan ..... T. D. 765 ft.; drilling plug; make 2,000,000 ft. gas and fresh water; completed.

Pure Oil Co.'s No. 1 Nick F. Fahn, in Amos Hudson Sur. No. 587, near NW line of Sur. ..... T. D. 1,646 ft. (corrected depth); drlg. in lime rock.

MILAM COUNTY

Service Oil & Gas Co.'s No. 1 Muldrow, L. Taylor Sur., SE cor. ..... Location.

Hill & Bonwell's No. 1 B. Booker, James Welch Sur..... Fishing 2,020 ft.

Lloyd Oil Corp.'s No. 1 San Clement, Fokes Sur..... Spudded in.

A. H. Wray's No. 1 D. D. Fowler ..... T. D. 1,688 ft.; sidetracked; 360 ft. of drill pipe lost in hole; now drlg.

McMULLEN COUNTY

Cowboys Oil Co.'s No. 1 Shiner, H. M. Brewer Sur..... T. D. 4,000 ft.; dry; abandoned.

Southern Crude Oil Purch. Co.'s No. 1 J. B. Baker, 2,310 ft. from S and E lines of Sec. 7, in the F. M. Lowe Sur. ..... T. D. 3,265 ft.; drlg. in sticky shale.

NUECES COUNTY

H. Grimm et al's No. 1 A. R. Roberts, Blk. 79, Winter Vegt. Garden Subd., 6 miles NW of Robstown, 12 miles NE Agua Dulce Field ..... T. D. 3,145 ft.; cored dry sandy shale.

SAN PATRICIO COUNTY

George B. Pickett's No. 1 Baldwin, 9,000 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Niel Sur., Abstract 211 ..... T. D. 930 ft.; drlg. in gumbo.

LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line..... T. D. 2,252 ft.; tested salt water; shut down.

STARR COUNTY

Smith & Adams' No. 1 Welch, Perdernal Sur.....T. D. 841 ft.; drlg.

UVALDE COUNTY

Waldrop & Welch's No. 1 H. S. Benson, 2 miles NW of Uvalde .....T. D. 970 ft.; shutting off water in Edwards lime.

Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S from Uvalde .....T. D. 780 ft.; drlg. in Edwards.

Phantom Oil Co.'s No. 1 Claudt, Sec. 661 .....T. D. 404 ft.; drlg. in lime.

WILLACY COUNTY

Weimer-Richardson's No. 1 Elmore .....T. D. 1,860 ft.; shut down in gumbo.

WILLIAMSON COUNTY

Harlem et al's No. 1 H. H. Stiles, in the J. Bevil Sur., 220 ft. N and 330 ft. E of Sur. .....Rigging up.

Fred Beatty's No. 1 H. Bland, 450 ft. from N line, 1,000 ft. from E line of tract, in the P. Coursey Sur., 1 mile east from Taylor .....T. D. 1,176 ft.; shut down.

Fred Beatty's No. 1 J. B. Pumphrey, 1,328 ft. from S and E lines of Mrs. J. B. Pumphrey 168-ac. tract, in the W. Cartwright Sur. .....Rigging up.

C. P. Link's No. 1 T. P. Simmons, 150 ft. W of CEL, in the S. Miller Sur. .....Location.

E. L. Chapman's No. 1 Fuchs, in the S. Miller Sur.....T. D. 2,017 ft.; swabbing; very little oil.

E. L. Chapman's No. 2 Fuchs, 150 ft. SW line, 750 ft. NW line of 93-ac. tract, in the S. Miller Sur.....T. D. 1,000 ft.; drlg.

G. B. Peterman's No. 2 J. C. Abbott, 450 ft. from S and W line of Abbott 100-ac. tract, in the Simon Miller Sur., SE from Thrall .....Rigging up.

Bridwell et al's No. 1 H. L. Martin, 1,150 ft. from N line, 150 ft. from W line of Simon Miller Sur.....Rigging up.

McNeil et al's No. 1 R. L. Abbott, 330 ft. NW line, 150 ft. NE line of Abbott 15-ac. tract, in the S. Miller Sur. .....Spudded in.

Powell & Kykendall's No. 1 Christian Mager, in the W. Byerly Sur., 150 ft. N and 450 ft. E of farms of 150 acres .....Old well deepening.

E. L. Chapman's No. 3 W. Fuchs, 170 ft. from S, 758 ft. E of NW cor. of R. L. Abbott farm, or 350 ft. E of No. 2, in Simon Miller Sur. .....Derrick.

E. L. Chapman's No. 1 Barney Lawrence, 330 ft. from SE and SW lines of farm, in the Simon Miller Sur...Rigging up.

E. L. Chapman's No. 1 J. F. McConnell, 150 ft. from S and W of 100-ac. farm, in the Simon Miller Sur...Derrick.

E. R. Ertell's No. 1 J. F. McConnell, 295 ft. from N line, 180 ft. from W of S 50-ac. of 100-ac. farm, in the Simon Miller Sur. .....Derrick.

Keeshan et al's No. 1 R. L. Abbott, 170 ft. from N line, 772 ft. from W line of farm, in the Simon Miller Sur. .....Derrick up.

E. W. Marts et al's No. 1 R. L. Abbott .....Spudded in.

Taylor Temple Oil Co.'s No. 1 F. M. Cain, 876 ft. from E line, 150 ft. from N line of C. D. Johnson 109-ac. tract, in the S. Miller Sur. .....Rigging up rotary.

J. A. Thompson's No. 1 T. H. Martin, 150 ft. N and E lines of 20-ac. tract, in the S. Miller Sur. .....Location.

Westheimer & Daube's No. 1 R. L. Abbott, 150 ft. from N and W lines of 57-ac. tract, in the S. Miller Sur...Location.

R. Wilder's No. 1 H. T. Martin, 158 ft. from N and E lines of H. T. Martin 76.25-ac. tract, in the S. Miller Sur. .....Rigging up rotary.

Sconyers Edwards et al's No. 1 J. C. Abbott, 88 ft. from N line, 300 ft. from E line of Abbott 100-ac. tract, in the Simon Miller Sur., SE from Thrall.....T. D. 1,804 ft.; completed; flowing 400 bbls. hour.

Simms Oil Co.'s No. 1 L. E. Lawrence, 150 ft. from N line, 150 ft. from W line of Lawrence 100-ac. tract, in the Simon Miller Sur., SE from Thrall.....T. D. 2,019 ft.; shut down; no oil; dry.

L. W. Wilson et al's No. 1 W. L. Lawrence, 150 ft. from W line and C N and S of 36-ac. tract or 1,400 ft. from SW line, 1,450 ft. SW line of H. Owens Sur....Spudded in.

WILSON COUNTY

Empire Gas & Fuel Co.'s No. 1 Shook, 1,350 ft. NW line, 7,100 ft. SW line, Vincente Zepeda Sur.....T. D. 3,608 ft.; top of Edwards.

ZAPATA COUNTY

John Pappas' No. 2 Cuellar, Por. 33 and 34 .....T. D. 1,890 ft.; sand 1,880-90 ft. shows gas.

National Oil Co.'s No. 1 D. B. Adams .....T. D. 690 ft.; shut down; lack of water; making considerable gas.

ZAVALA COUNTY

Weigand Bros.' No. 1 W. L. Gates, Hooper & Wade Sur. No. 13, 1,320 ft. S of N line, 1,220 ft. W of NE cor. Sur., about 16 miles S of Batesville .....T. D. 1,700 ft.; drlg. in shale.

Jack Baldwin's No. 1 J. R. Price, in the W. E. Erskin Sur. No. 34 .....Spudded in and shut down.

Southern Crude Oil Purch. Co.'s No. 1 Nat M. Washer, in the T. Pinckhardt Sur. No. 180, 1 deg. E, 6,795 ft. from SE cor. .....T. D. 3,065 ft.; lime rock; fishing.

Ike Pryor's No. 1 Martha Campbell, 400 ft. from N line, 5,400 ft. from E cor. of Sur., Sec. 99, in the Martha Campbell Sur., 3½ miles NE from La Pryor..T. D. 1,300 ft.; drlg.

F. Baldwin's No. 1 Washer, 300 ft. S and E of Sec. 34, in the W. E. Erskine Sur. .....Spudded in and shut down.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 58)

Humble & Valley's No. 5 Saunders .....Drlg. shale and lime 1,730 ft.

Humble & Valley's No. 4 Sherrill .....Drlg. shale and lime 168 ft.

Humble & Valley's No. 6 Thompson .....Drlg. shale and hard sand 3,325 ft.

Humble & Valley's No. 7 Thompson .....Derrick.

Humble & Valley's No. 7 Urban .....Shut down 1,165 ft.

Humble & Valley's No. 8 Thompson .....Location.

Humble & Valley's No. 7-A Walton .....Comp. flowing 123 bbls. oil 3,448 ft.; standing.

Humble & Valley's No. 4 Woodley .....Comp. flowing 300 bbls. oil 3,469 ft.

Humble & Valley's No. 6 Woodley .....Derrick.

Humble & Valley's No. 7 Woodley .....Derrick.

Humble & Valley's No. 8 Woodley .....Derrick.

DE WALT—FORT BEND COUNTY

Humble Oil & Ref. Co.'s No. 3-B Bankers Mortgage .....Total depth 3,557 ft.; cem. 6⅝-in. casing 3,527 ft.

Humble Oil & Refg. Co.'s No. 13 Brazos .....Rig.

Humble Oil & Refg. Co.'s No. 14 Brazos .....Drlg. shale 1,460 ft.

Humble Oil & Ref. Co.'s No. 13 Sugarland .....Rig.

Humble Oil & Ref. Co.'s No. 9 Nelson .....Total depth 3,742 ft.; cem. 6⅝-in. casing 3,630 ft.

HUMBLE—HARRIS COUNTY

Benedum & Trees' No. 1 Foley, south .....Rig.

Continental Oil Co.'s No. 1 Koltar, south .....Drlg. gumbo 1,070 ft.

Houtex Oil Co.'s No. 1 O'Boyle, west .....Drlg. shale 3,276 ft.

Humble Oil & Refining Co.'s No. 11 Williams, south .....Rig.

M. LaRue's No. 1 Cicero .....Drlg. rock 2,217 ft.

T. P. Lee's No. 1 Wheeler & Pickens, east .....Rig.

Lee & Wilson's No. 1 Wise, west .....Derrick.

Rio Bravo Oil Co.'s No. 1 fee, west .....Drlg. hard sand 3,327 ft.

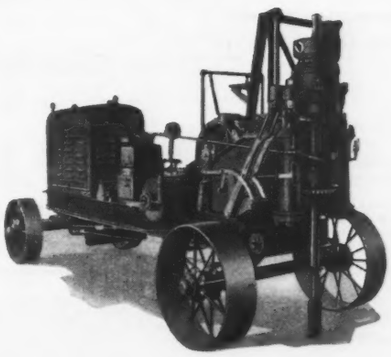
Showers & Moncrief's No. 1 Hull .....Drlg. shale and lime 2,557 ft.

South Texas Petroleum Co.'s No. 4 Lee, south .....Location.

Southern Drlg. & Prod. Co.'s No. 1 Allo .....Drlg. sand and shell 3,475 ft.

Rotary table drive and hydraulic feed combined

OIL OPERATORS are always on the alert for changes and improvements which will eliminate waste time and increase the effectiveness of their structure drilling. Rotacore's big new feature accomplishing these results is the combination of rotary table drive with hydraulic feed, permitting immediate change from brake feed, as in rotary drilling, to hydraulic feed, as in diamond drilling! The change is quickly accomplished by loosening or tightening four chuck bolts, as required. Briefly, Rotacore combines principles of both diamond drill and rotary drill operation.



ROTACORE

Consider the advantages of this quick change from brake feed to hydraulic feed: with brake feed the grief stem can be run in without continual rechucking, but if a hard layer is encountered, hydraulic pressure can be immediately applied by tightening the chuck bolts.

Rotacore's capacity is 3000 feet of N size hole, 2-13/16 inches in diameter, recovering 2-inch core. The hydraulic has a length of feed of 18 inches, and lifting capacity of 7 tons.

Rotacore is powered with a Waukesha industrial type 45 H. P. motor complete with multiple disc dry plate clutch, 3 forward speeds and reverse.

A rotary table by means of which drill rods are rotated, is built in with recessed drive bushing through which passes a fluted or square grief stem coupled to the upper end of the rods. The grief stem can slip through the table while being rotated, the downward feed being controlled either by the hydraulic cylinders or by the cable from the drum.

All controls, including motor throttle, are at the operator's finger tips. A cat-head has been added in response to the necessities of field experience. The entire unit is mounted on a substantial steel truck with front wheels 8 inches and rear wheels 10 inches in width. Write to our branch office at Ponca City, Oklahoma, or to Minneapolis for your copy of Rotacore bulletin No. 32.

E. J. LONGYEAR COMPANY
Minneapolis, Minnesota

Mid-Continent Branch: Ponca City, Oklahoma

Longyear

Cullen & West's No. 2 Burt, east ..... Reaming to set casing; total depth 4,568 ft.
Sun Oil Co.'s No. 4 Bender, west ..... Drlg. shale 3,920 ft.
The Texas Company's No. 1 Atlantic & Gulf, southeast .. Set 220-ft. screen 4,960 ft.; comp. flowing 115 bbls. hr. on ⅝-in. choke, gravity 43.8°.
The Texas Company's No. 16 Koehler (workover) ..... Cem. casing 3,026 ft.
The Texas Company's No. 24 House, north ..... Drlg. hard sand 3,449 ft.

BLUE RIDGE—FORT BEND COUNTY

Humphreys Corp.'s No. 1 West-Schenck (workover) ..... No report.
Sinclair Oil & Gas Co.'s No. 1 Blakely ..... Drlg. shale and lime 3,261 ft.

PIERCE JUNCTION—HARRIS COUNTY

Continental Oil Co.'s No. 2 Prudential (workover) ..... To test sand showing oil 4,320 ft.
Navarro Oil Co. and Texas Exploration Co.'s No. 18 Dooley ..... Drlg. gumbo 4,691 ft.
Pure Oil Co.'s No. 2 Herman, southwest ..... Set 65 ft. screen 4,634 ft.; comp. flowing 728 bbls. pipe line oil first 15 hrs. on ⅜-in. choke; gravity 32.8° at 68°; 600 lbs. pressure.
Rio Bravo Oil Co.'s No. 12-A Settegast (workover) ..... Drlg. hard sand 2,892 ft.
Rio Bravo Oil Co.'s No. 13-A Settegast (workover) ..... Milling 3,468 ft.
Rio Bravo Oil Co.'s No. 18-A Settegast, west ..... Derrick.
Rio Bravo Oil Co.'s No. 19-A Settegast ..... Location.
Saxet Gas Co.'s No. 6 Herman, southwest ..... Standing.
Saxet Gas Co.'s No. 7 Herman, southwest ..... Derrick.
Superior Oil Co.'s No. 3-A Whitehead ..... Rigging up to pump 4,228 ft.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 11 Groggan ..... Comp. flowing 500 bbls. 3,556 ft.
The Texas Company's No. 6 Green, northwest ..... Drlg. gumbo 1,978 ft.

HULL—LIBERTY COUNTY

The Texas Company's No. 1 Barrow fee ..... Derrick.
The Texas Company's No. 8 Hannah-Vacuum ..... Sidetracking sticky shale 4 881 ft.; total depth 5,067 ft.

BIG CREEK—FORT BEND COUNTY

Benedum & Trees' No. 1 J. F. Ahlers ..... Derrick.
Benedum & Trees' No. 1 Moore ..... Heaving shale 4,179 ft.; cem. 6⅝-in. casing.
Navarro Oil Co.'s No. 4 Hausler ..... Drlg. shale 3,583 ft.
The Texas Company's No. 4 fee (workover) ..... Drilled plug to test oil sand 4,336 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 10 Mayes ..... Gumbo 2,700 ft.; cem. 6⅝-in. casing 2,698 ft.
Pure Oil Co.'s No. 11 Mayes ..... Rig.
Pure Oil Co.'s No. 4 Lost Lake ..... Drlg. hard lime 4,229 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 26 Wisdom ..... Total depth 6,058 ft.; washing 5,936 ft.

BATSON—HARDIN COUNTY

East Batson Oil Co.'s No. 9 Bates ..... No report.

SOUR LAKE—HARDIN COUNTY

Lake View Oil Co.'s No. 8 Minor ..... No report.
Gilbert Oil Co.'s N. 107 Gilbert ..... Derrick.
M. E. Peveto's No. 1 Merchant ..... No report.
The Texas Company's No. 305 fee ..... Sand and shale showing oil 869-90 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 80-A Cotton ..... To pump 503 ft.
Rio Bravo Oil Co.'s No. 80-B Cotton ..... Drlg. gumbo 160 ft.

GOOSE CREEK—HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 77 Simms-Smith ..... Drlg. sticky shale 5,802 ft.
A. F. Bradbury's No. 5 Gillette ..... Total depth 910 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 61 McFaddin (workover) ..... Drlg. 4,000 ft.
Yount Lee Oil Co.'s No. 79 McFaddin (workover) ..... Pulling screen to deepen.
Yount Lee Oil Co.'s No. 97 McFaddin (workover) ..... Drlg. sandy shale 5,800 ft.
Yount Lee Oil Co.'s No. 124 McFaddin ..... Drlg. sand 5,106 ft.
Yount Lee Oil Co.'s No. 126 McFaddin ..... Drlg. shale 4,646 ft.
Yount Lee Oil Co.'s No. 127 McFaddin ..... Drlg. 5,320 ft.
Yount Lee Oil Co.'s No. 128 McFaddin ..... Spudded.
Yount Lee Oil Co.'s No. 99 Gladys City ..... Heaving shale 5,453 ft.
Yount Lee Oil Co.'s No. 45 Gladys City ..... Testing 3,236 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Saxet Oil Co.'s No. 3 Hogg ..... Derrick.
The Texas Company's No. 26 Arnold ..... Comp. flowing 200 bbls. oil 2,694 ft.

NORTH DAYTON—LIBERTY COUNTY

V. H. Borsodi's No. 1 Gulf ..... Rig.
John A. Deering's No. 6 fee ..... Standing.
Humble Oil & Refining Co.'s No. 1 Jamison, south ..... Drlg. hard sand 5,023 ft.
Harrison Oil Co.'s No. 1 Jamison ..... Drlg. hard sand 5,023 ft.
Harvey Smith's No. 1 Simmons & Brown ..... Fishing drill stem 3,980 ft.
The Texas Company's No. 1 Paraffine fee ..... Sticky shale and boulders 2,230 ft.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 5-A Smith ..... Drlg. hard sand and shale 4,756 ft.
Marrs McLean's No. 17 Cade ..... Reaming 3,591 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co. No. 21 Moore ..... Started drilling.

REFUGIO—REFUGIO COUNTY

Fox-Heflin's No. 1 Fannie Heard ..... Comp. gas well spraying oil; sand 3,682-3,700 ft.
Houston Oil Co.'s No. 1 Rooke Hotel ..... Reset screen 3,696 ft.; comp. flowing 500 bbls. fluid.
Houston Oil Co.'s No. 14 Rooke ..... Drlg. shale and lime 3,203 ft.
Houston Oil Co.'s No. 1 Tom Heard ..... Drlg. gumbo and lime 4,496 ft.
Houston Oil Co.'s No. 1 Shelton ..... Cem. casing to test oil sand 3,664-82 ft.
Houston Oil Co.'s No. 1 Dorsey ..... Tested salt water 3,686-3,702 ft.; to plug back.
Houston Oil Co.'s No. 1 Doughty ..... Cem. 9⅝-in. casing 4,466 ft.
Houston Oil Co.'s No. 1 Leisering ..... Drlg. gumbo 1,248 ft.
Houston Oil Co.'s No. 9 Fannie Heard (workover) ..... Drlg. sandy shale 3,699 ft.
Independent Oil & Gas Co.'s No. 1-C Heard ..... Drlg. sandy lime 4,591 ft.
Independent Oil & Gas Co.'s No. 3 Claude Heard ..... Set 10-ft. screen 3,696 ft.; swabbing.
Independent Oil & Gas Co.'s No. 4 Claude Heard ..... Rig.
Independent Oil & Gas Co.'s No. 5 Claude Heard ..... Derrick.
Independent Oil & Gas Co.'s No. 1 T. P. Shelley ..... Abandoned 5,487 ft.
Independent Oil & Gas Co.'s No. 1 Huddleston ..... Location.
Independent Oil & Gas Co.'s No. 1 Mercy Academy ..... Drlg. rock 3,868 ft.
Independent Oil & Gas Co.'s No. 1 Helen Reilly ..... Tested salt water 3,682 ft.; to reset.
Independent Oil & Gas Co.'s No. 1 M. F. Lambert ..... Location.
Independent Oil & Gas Co.'s No. 2 West ..... Drlg. gas sand 3,653 ft.
Karona Oil Co.'s No. 1 Zarsky ..... Preparing to make drill stem test 3,699 ft.
Edwin M. Jones' No. 1-A J. F. B. Heard ..... Swabbed small amount oil 3,682 ft.; pulling liner.
Edwin M. Jones' No. 1-A Mitchell ..... Location.
Edwin M. Jones' No. 1 Jeter ..... Tested salt water 3,710 ft.
Mission Drlg. Co.'s No. 1 O'Brien ..... Drlg. gumbo 5,098 ft.
Mission Drlg. Co.'s No. 1 Moss ..... Testing oil sand 5,480-92 ft.
T. P. Morgan's No. 1 City ..... Derrick.
T. P. Morgan's No. 1 St. Johns ..... Location.
Morgan & Morgan's No. 1 Rooke ..... Abandoned 5,924 ft.
Morgan Oil Corp.'s No. 1 Fox, Block 70 ..... Comp. flowing 565 bbls. fluid, 12 per cent salt water 3,701 ft.
Morgan Oil Corp.'s No. 1 Carlysle, Block 2 ..... Comp. dry gas well, 1,900 lbs., 5,470 ft.
Morgan Oil Corp.'s No. 1 Powers ..... Drlg. sand shale 5,381 ft.
Morgan Oil Corp.'s No. 6 Town Commons ..... Location.
Morgan Oil Corp.'s No. 7 Town Commons ..... Location.
Pearson Properties' No. 1 Ryalls ..... Comp. flowing 1,160 bbls. pipe line oil on ⅛ and ¼-in. chokes; 1,600 lbs. pressure; sand 5,478-82 ft.
Pearson Properties' No. 1 Johnson ..... Drlg. rock 904 ft.
Ed Price et al's No. 1 Mission River ..... Shut down for repairs 2,704 ft.
Rutherford-Traylor Oil Co.'s No. 1 Cable ..... Derrick.
Saxet Oil Co.'s No. 2 Ryals ..... Derrick.
Saxet Oil Co.'s No. 2 Cable ..... Derrick.
Saxet Oil Co.'s No. 3 Holmes Heard (old well) ..... Abandoned 3,692 ft.
Strube & Strube's No. 1 Cable ..... Fishing drill pipe 3,682 ft.
Sun Oil Co.'s No. 3 Buckley, Lot 5, Blk. 2 ..... Tested salt water 3,693 ft.
The Texas Company's No. 1 Shelton ..... Abandoned 6,050 ft.
Union Producing Co.'s No. 2 Lambert ..... Drlg. sand 4,506 ft.
Union Producing Co.'s No. 3 Lambert ..... Rigging.
Union Producing Co.'s No. 3 Morgan-Shelly ..... Drlg. hard lime 2,603 ft.
Union Producing Co.'s No. 3 Morgan-Vance ..... Drlg. shale 2,749 ft.
Union Producing Co.'s No. 3 O'Brien ..... Drlg. gumbo 1,497 ft.
Union Producing Co.'s No. 4 O'Brien ..... Drlg. shale 1,989 ft.
Union Producing Co.'s No. 4 Shelley ..... Drlg. shale 1,989 ft.
Union Producing Co.'s No. 3 Powers ..... Rigging.
Union Producing Co.'s No. 4 Powers ..... Location.
Union Producing Co.'s No. 2 Shelton ..... Location.
Union Producing Co.'s No. 3 Mitchell ..... Rig.
Union Producing Co.'s No. 4 Mitchell ..... Location.
Union Producing Co.'s No. 4 O'Brien ..... Drlg. 1,007 ft.
Union Producing Co.'s No. 1-A Rose Lambert ..... Total depth 6,475 ft.; cem. 5 3/16-in. casing 6,475 ft.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Vacuum Oil Co. and Gulf Ref. Co.'s No. 25 Miller ..... Sidetracking 3,790 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 26 Miller ..... Rig.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 27 Miller ..... Derrick.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 8 Bordages ..... Abandoned 4,401 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 5 Freiberg & Wolf ..... Location.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 17 Watkins ..... Derrick.
Calcasieu Oil Co.'s No. 5 Caldwell ..... No report.
Duhon Oil & Mineral Co.'s No. 1 Duhon ..... Derrick.
Sunshine Oil Co.'s No. 6 Ellender ..... No report.
Rex Petroleum Corp.'s No. 1 Duhon ..... Bailed dry; standing.
Rycade Oil Corp.'s No. 1 Gulf Land ..... Abandoned 5,087 ft.; drill stem stuck.
Rycade Oil Corp. and Humble's No. 5 Gulf Land ..... Location.
The Texas Company's No. 6 State, Calcasieu Lake ..... Total depth 3,306 ft.; trying to straighten hole.

JENNINGS—ACADIA PARISH

Cline, Smith & Cline's No. 9 Conklin ..... No report.
The Texas Company's No. 5 Rayne heirs, King tract ..... No report.
Yount Lee Oil Co.'s No. 8 Houssiere-Latrielle, Section 47-9s-2w ..... Drlg. 6,000 ft.
Yount Lee Oil Co.'s No. 6 Crowley ..... Drilled rock 4,521-69 ft.

EDGERLY—CALCASIEU PARISH

Rex Petroleum Co.'s No. 11 Hunter ..... No report.
Strange Oil Co.'s No. 1 Koonce ..... Rigging up to pump 3,774 ft.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 4 Gray (workover) ..... No report.
Vinton Petroleum Co.'s No. 5 Matilda Gray ..... Drilling.
Vinton Petroleum Co.'s No. 6 Matilda Gray ..... Rigging up to pump 2,429 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 9 Bouillon fee ..... Drlg. water sand 3,410 ft.
The Texas Company's No. 2 St. Martin Land Co. ..... No report.

STARKS—CALCASIEU PARISH

J. O. Davis' No. 1 Industrial ..... Standing 3,775 ft.
Gulf Refining Co.'s No. 20 Lutcher-Moore ..... Drlg. 676 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 9 Yount Lee ..... Drlg. gumbo 4,190 ft.

ANSE LA BUTTE—ST. MARTIN PARISH

Yount Lee Oil Co.'s No. 1 Hebert ..... Drlg. 5,346 ft.

SORRENTO—ASCENSION PARISH

Gulf Refining Co.'s No. 17 United Land Co. ..... Total depth 4,170 ft. in gyp.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

Black Oil Co.'s No. 1 Lancashire, near Sealey ..... Drlg. gumbo 2,896 ft.
Empire Gas & Fuel Co.'s No. 1 Boyd, San Felipe ..... Started drilling.
O'Hara et al's No. 1 Batla, near Raccoon City ..... Drlg. shale 3,904 ft.
McInnery et al's No. 1 McDay, west of Kinney ..... Shut down 500 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. ... Shut down for water 1,248 ft.
Mills Bennett Production Co.'s No. 1 Random, Allen ... Started drilling.
Faust et al's No. 5 Faust ..... Drlg. gumbo 3,905 ft.
Rucks & Patterson's No. 1 Hunter, southwest of Hoskins.. Shut down 1,185 ft.
Rycade Oil Corp.'s No. 1 Rapid City, Henry Austin Sur... Started drilling.
Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury ..... Cem. 9⅝-in. casing to test sand showing oil 4,812-20 ft.
Steel & Strickland's No. 1 Lockridge ..... Rig.
Word Drlg. Co.'s No. 1 Proctor, west of Hoskins Mound.. Abandoned 3,115 ft.

CHAMBERS COUNTY

Shell Petroleum Corp.'s No. 1 Herff, Moss Bluff ..... Drlg. sticky shale and lime 1,169 ft.
Pine Oil Co.'s No. 1 Kirby, Charles Tilton Survey ..... Location.

FORT BEND COUNTY

Gulf Production Co.'s No. 1 Brazos Valley, Clodine ..... Drlg. sand 5,694 ft.
Pure Oil Co.'s No. 1 Jackson Brown, Barrett and Harris Sur. ..... Derrick.

GALVESTON COUNTY

Superior Oil Corp.'s No. 1 Jackson ..... Rig.

GRIMES COUNTY

Cranfill & Reynolds Oil Co.'s No. 1 Baylor, southeast Navasota ..... Drlg. shale 2,267 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Bailing salt water 4,247 ft.
Higgins Oil & Fuel Co.'s No. 1 Sladous, Mykawa ..... Drlg. shale 6,092 ft.
Humble Oil & Ref. Co.'s No. 7 Warren, Hockley ..... Drlg. hard sand 4,630 ft.
Humble Oil & Ref. Co.'s No. 2 Minnetex ..... Standing with casing cem. 1,177 ft
Humble Oil & Ref. Co.'s No. 1 Sladous (workover) ..... Set screen to test gas sand 4,839-4,933 ft.
Rich et al's No. 1 Highlands ..... Derrick.
Sloan Prospecting Co.'s No. 1 Ulrich, Hannah Nash Sur. . Drlg. gumbo 1,779 ft.
Martin, Drake & Jones' No. 1 Haney ..... Drlg. shale and lime 3,610 ft.
Watts Brothers' No. 1 Hubert, Mykawa ..... Drlg. water sand 5,525 ft.

JEFFERSON COUNTY

Bayou Oil Co.'s No. 1 Hooks-Borduge ..... Drlg. sand and shale 2,165 ft.
Gulf Production Co.'s No. 8 Bordages ..... Drlg. sand 6,307 ft.
Gulf Production Co.'s No. 1-A Guy Junker, Fannett ..... No report.
Gulf Production Co.'s No. 13 Thomas, Fannett ..... Comp. flowing 1,500 bbls. fluid, 90 per cent water, 3,911 ft.
Gulf Production Co.'s No. 5 Burrell, Fannett ..... Drlg. sand and boulders 2,983 ft.
The Texas Company's No. 1 Fitzhugh, Big Hill ..... Total depth 5,857 ft.; reaming.
Westbury Oil Co.'s No. 1 West, Choate Sur. ..... Shut down 2,850 ft.

LIBERTY COUNTY

Gulf Production Co.'s No. 1 Weiser ..... Drlg. sticky shale 6,394 ft.
Gulf Production Co.'s No. 4 Boyt, Hankamer ..... Location.
Gulf Production Co.'s No. 5 Boyt, Hankamer ..... Rig.
Gulf Production Co.'s No. 1 McFaddin, Moss Bluff ..... Location.
Cranfill & Reynolds Oil Co.'s No. 8 Esperson, Sheeks ..... Drlg. gumbo 3,210 ft.
Cranfill & Reynolds Oil Co.'s No. 9 Esperson, Sheeks ..... Drlg. gumbo 805 ft.
Cranfill & Reynolds Oil Co.'s No. 2 Moores Bluff, Sheeks.. Drlg. rock 1,845 ft.
Yount Lee Oil Co.'s No. 2 Moores Bluff, Sheeks ..... Cem. 6⅝-in. casing 3,290 ft.; sand 3,338 ft.

MATAGORDA COUNTY

Cockburn et al's No. 1 Hawkins, Shepherds, Mott ..... Drlg. rock 4,789 ft.

MONTGOMERY COUNTY

Kelley-Kaker's No. 2 Guergus ..... Drlg. shale 1,804 ft.

ORANGE COUNTY

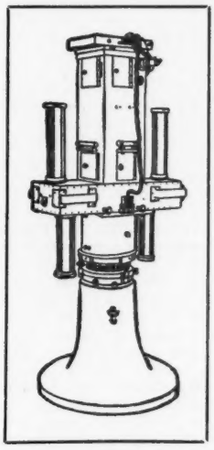
Gulf Production Co.'s No. 1 W. H. Starks, Port Neches ... Rigging.
The Texas Company's No. 2 Kuhn, Port Neches ..... Rig.
The Texas Company's No. 2 Stark, Port Neches ..... Started drilling.

WALLER COUNTY

Kirby Petroleum Co.'s No. 2 Davis, San Felipe ..... Spudded.
W. P. Morris' No. 1 Chapman, Donoho Sur. ..... Shut down 2,080 ft.

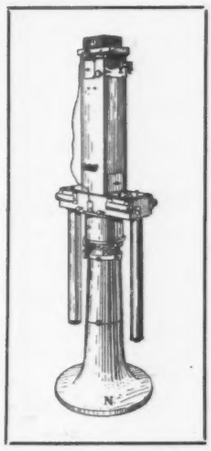
ASKANIA

COMPLETE EQUIPMENT *for* GEOPHYSICAL EXPLORATION



In use with the leading oil companies in North Central and South America

Torsion Balances with photographic and visual reading —large and small size; Magnetometers, vertical and horizontal type; Earth Inductors, Seismographs and various auxiliary apparatus.

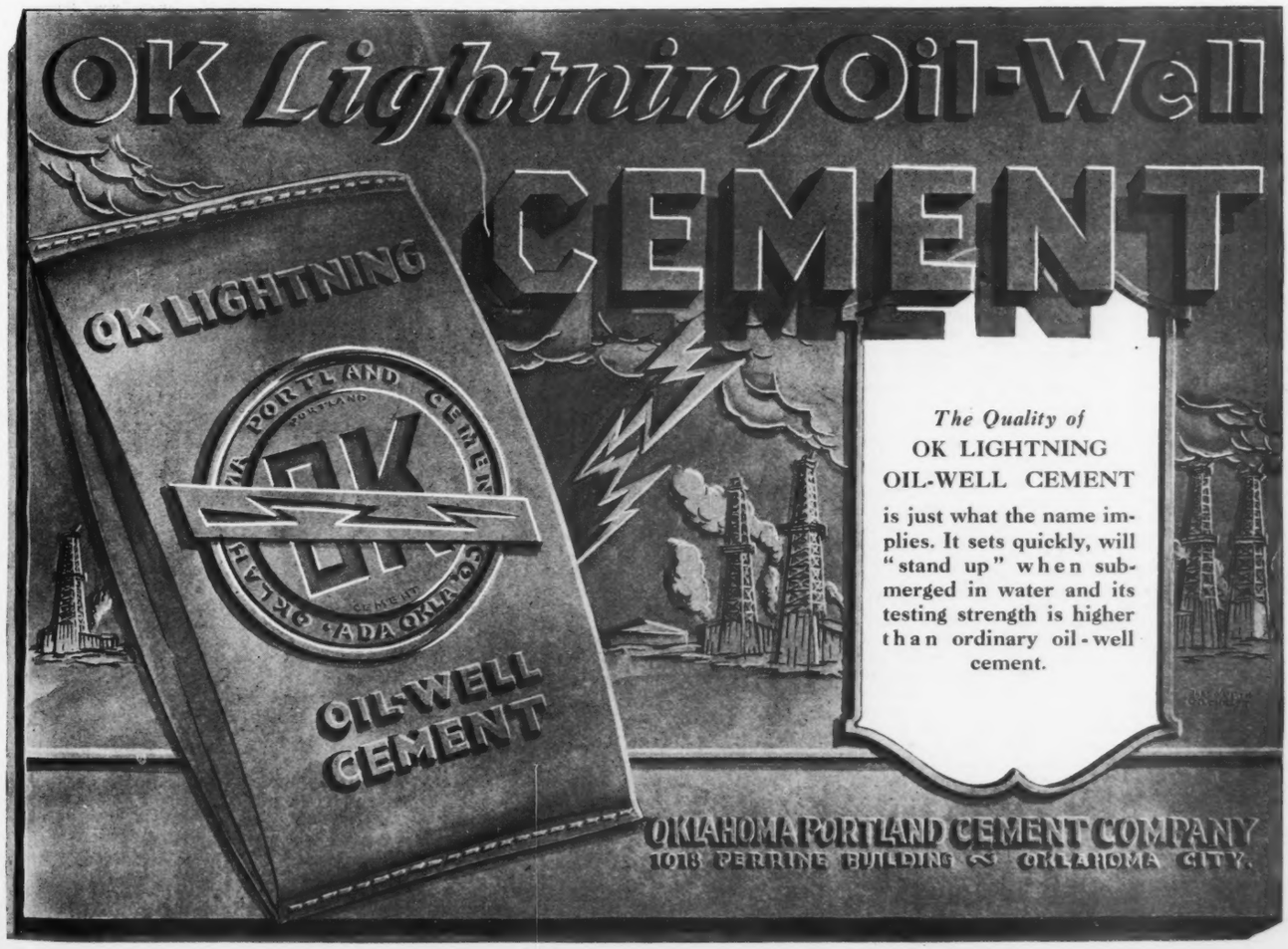


For further details write:

AMERICAN ASKANIA CORPORATION

622-624 Marine Bank Building, HOUSTON, TEXAS

OK Lightning Oil-Well CEMENT


OK LIGHTNING
OIL-WELL CEMENT
The Quality of
OK LIGHTNING
OIL-WELL CEMENT
is just what the name implies. It sets quickly, will "stand up" when submerged in water and its testing strength is higher than ordinary oil-well cement.
OKLAHOMA PORTLAND CEMENT COMPANY
1018 PERRINE BUILDING OKLAHOMA CITY.

SOUTH LOUISIANA
ACADIA PARISH
Calcasieu Oil Co.'s No. 1 Hays, Sec. 10-8s-1w ..... Drlg. 2,301 ft.
ASSUMPTION PARISH
Gulf Refining Co.'s No. 1 Armilise, Napoleonville ..... No report.
CALCASIEU PARISH
Wilfred Lahay's No. 2 James ..... Standing 3,775 ft.
Calcasieu Oil Co.'s No. 1 Moss, Sec. 8-10s-9w ..... Location.
CAMERON PARISH
Shell Petroleum Corp.'s No. 14 Watkins, Black Bayou ... Rig.
Shell Petroleum Corp.'s No. 15 Watkins, Black Bayou ... Drlg. sticky shale 933 ft.
The Texas Company's No. 5 Calcasieu Lake, Calcasieu Lake Dome ..... Building derrick.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Coring sand 2,600 ft.
IBERIA PARISH
The Texas Company's No. 5 Vermillion Bay ..... Location.
IBERVILLE PARISH
Shell Petroleum Corp.'s No. 4 Wilbert, White Castle .... Drlg. soft shale 3,412 ft.
Standard Oil Co.'s No. 4 Schwing, Bayou Blue ..... Drlg. 1,412 ft.
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Building derrick.
Standard Oil Co.'s No. 5 Wilbert, Bayou Blue ..... Drlg. 1,204 ft.
Standard Oil Co.'s No. 6 Wilbert, Bayou Blue ..... Building derrick.
Standard Oil Co.'s No. 1 Case, Bayou Des Glaise ..... No report.
JEFFERSON DAVIS PARISH
Pure Oil Co.'s No. 1 May, Sec. 1-10s-5w ..... Total depth 3,970 ft.; set whipstock to sidetrack.
Shell Petroleum Corp.'s No. 1 Heyd, Iowa ..... Rigging up.
Yount Lee Oil Co.'s No. 1 Courtney, Welsh ..... Rig.
LA FOURCHE PARISH
Gulf Refining Co.'s No. 1 City of New Orleans, Bay Champagne ..... No report.
The Texas Company's No. 1 Leesville ..... Rig.
PLAQUEMINE PARISH
Humble Oil & Ref. Co.'s No. 1 Cockrell-Moran, Lake Grand Ecaille ..... Total depth 1,739 ft.; set screen to test.
Humble Oil & Ref. Co.'s No. 1 Lake Washington, Lake Grand Ecaille ..... Drlg. hard sand 4,396 ft.
The Texas Company's No. 4 State, Garden Island Bay ... Rig.
ST. LANDRY PARISH
Elbof Exploration Co.'s No. 1 Ledoux, Eunice ..... No report.
Herbert-Baker Oil Co.'s No. 1 Fisher, Sec. 16-3S-4e ..... No report.
Gulf Refining Co.'s No. 3 Gaudet, Port Barre ..... Drlg. 2,701 ft.
Gulf Refining Co.'s No. 2-A Hoskins, Port Barre ..... Drlg. 1,892 ft.
The Texas Company's No. 5 Botney Bay, Port Barre .... Drlg. 3,096 ft.
The Texas Company's No. 6 Botney Bay, Port Barre .... Waiting cement to set.
ST. MARTIN PARISH
The Texas Company's No. 1 fee, Hager Dome ..... No report.
The Texas Company's No. 3 fee, Hager ..... Location.
The Texas Company's No. 2 St. Martin ..... See Bayou Bouillon.
The Texas Company's No. 1 Iberville, Hazer ..... No report.
ST. MARY PARISH
Pure Oil Co.'s No. 2 Wax Lake, Sec. 12-17s-9e ..... Rigging.
Vacuum Oil Co.'s No. 1 Zenor, Patterson ..... Drlg. sandy shale 5,042 ft.
TERREBONNE PARISH
Charles Paggi's No. 2 Evergreen, Sec. 145-15s-16e ..... No report.
The Texas Company's No. 4 State-Bay St. Elaine ..... Gumbo 1,111 ft.; set 12½-in. casing.
The Texas Company's No. 1 La. L. & E. Co., Bay Junope.. Location.
The Texas Company's No. 2 State, Lake Pelto ..... Location.
The Texas Company's No. 3 State, Lake Pelto ..... Oil sand 4,278-4,389 ft.; tested dry.
The Texas Company's No. 2 State, Caillou Island ..... Location.
The Texas Company's No. 3 State, Lake Barre ..... Comp. flowing 88 bbls. pipe line oil hr. 3,871 ft.; gravity 27.7° (corrected); temperature 73°.
The Texas Company's No. 4 State, Lake Barre ..... Location.
The Texas Company's No. 3 La. L. & E. Co., Four Isle ... Location.

LA.-ARK. FIELDS

(Continued from Page 53)

high if a chalk rock crevice well can be "high" or "low," and V. M. Miller's No. 1 Colquitt in the same section was completed swabbing and flowing 500 bbls., total depth 2,194 feet—still "higher" in the chalk or Marlbrook or whatever the geologists who are still quarreling over the source of Zwolle oil finally decide to call the producing formation.

It was a queer coincidence that older wells in the field began to stop producing at the same hour Gray's well began. The distance between them, however, is so great that no one has suggested that the new producer could have had any effect on the older ones. No explanation for the sudden death and later resurrection of these older wells has been attempted—and the chances are none will be.

Blue Lake

Some activity is appearing in the Blue Lake, west end of the Zwolle district, with a half-dozen or so new operations getting under way. Incidentally, all Benedum & Trees Oil Co.'s operations in Sabine and elsewhere in this division are now listed as Loring Oil Co., a new organization formed for the purpose of conducting all Benedum & Trees' North Louisiana and "border county" Texas operations. There was a rumor on the streets as the week closed that their Shelby County, Texas, well, No. 1 McCann in the D. G. Green Survey, had made a big show of gas at around 3,100 feet. But it did not. Simplex Oil Co., the plaything of the late Senator Tom Taggart of Indiana, which has heretofore confined itself strictly to its privately owned Shift Tail Lake Pool between Pine Island and Oil City districts of Caddo, ventured into Sabine Parish during the week and bought approximately 500 acres scattered through the Blue Lake end of Zwolle in Sections 11, 12, 15 and 25, 7-14 and 18-30 and 27, 7-13, paying $24,000 cash and an overriding royalty graduated from one-eighth on wells of 200 bbls. initial and over down to a one-thirty-second on wells of 50 to 100 bbls.

Richland Gas Area

Richland Parish gas area has been rather quiet for the past two weeks. Of three completions this week two were wildcat failures on the north edge of the field. Industrial Gas Co.'s No. 1 A. T. Davidson, Section 6-16-7, dry at 2,763 feet, and No. 1 Ruston Drilling Co., Section 7-16-7, dry at 2,630 feet. It will be noted that both were tests for the "second sand" in which Hope Producing Co. got a big gasser at around 2,900 feet last fall. Nobody has got anything below 2,450 feet since, though many have tried. The one producer was United Carbon Co.'s No. 1 D. R. Sartor in Section 11-16-6, 46,080,000 feet, total depth 2,455 feet. Fee owners in Richland are wailing more or less because the producers, with the advent of warm weather and consequent decline in demand, are cutting off some wells and shutting down their pull on others. Louisiana Gas & Fuel Co.'s No. 1 Chapman, Section 36-16-6, in the far southeastern corner of proven territory staged a blowout at 2,493 feet and is being pumped full of mud.

Webster Parish

When Standard Oil Co. wrote No. 1 Crichton, Section 33-21-10, Webster Parish, off the books as a dry hole at 4,728 feet Cotton Valley was washed out so far as active drilling operations are concerned. Sarepta district, which may or may not develop as part of the Carterville structure in Bossier Parish, had a small pumper in Sarepta Oil Co.'s No. 1 Gardner, Section 1-22-11, total depth 2,719 feet. As the week ended there was a report that Pat Hudson's No. 1 Slack, Section 36-23-11, had been completed flowing 300 bbls. of clean oil. A drill stem test showed 2,000 feet of oil in the hole with a little oil showing from 2,741 feet.

Doris Thomason's No. 5 J. M. Tros-per in the Jane Thorpe Survey of Panola County, Texas, Bethany gas district, measured 1,000,000 feet of gas, total depth 2,370 feet.

Ouachita County

Magnolia Petroleum Co.'s Stephens (Ouachita County, Arkansas) No. 1 Grayson, in Section 21-15-19, pumped 100 bbls. of oil and 225 bbls. of salt water from 1,480 feet, quite shallow for Stephens. Southern Producing Co.'s No. 3-A Watts, Section 27-15-15, Ouachita County, an edge well or a slight northeast extension of Smackover, which ever choice may be made of it, pumped 25 bbls. initial from 2,052 feet. It is another case of getting new production out of territory that has long since passed the "flush" period—just as Gulf Refining Co. is still getting money makers in Caddo Lake. Kobler & Erickson, after setting surface casing, abandoned No. 1 Rumph & Tyson, Section 13-15-16, a wildcat 2 miles north of Smackover production, and A. P. Smith's No. 1 Reynolds, Section 21-14-17, Ouachita County, a rank wildcat 6 miles south of Camden, was abandoned at 1,777 feet.

Sonnell Felsenthal's No. 1 Fee, formerly O. W. Estes' No. 1 Felsenthal, Section 2-18-15, between El Dorado South Field and El Dorado East Field production, more properly belonging to the latter, was completed at 2,191 feet pumping 12 bbls., and Modisette Drilling Co.'s No. 1 Union Sawmill, Section 14-18-14, in the prospective revived Urbana district, was listed as a 40-bbl. pumper at 2,256 feet.

Urbana may turn out to be a definite producing area but its history dating back to the winter of 1926-27 is against it; the new stuff from the red beds around 3,500-3,600 feet notwithstanding. Wells now drilling in that area have not appeared so promising though most of them have made showings sufficient to encourage the operators to spend more money. Northwest of Urbana, O. W. Estes' No. 1 Telford, Section 35-17-14, tested salt water at 2,674 feet and was abandoned. Stark and others abandoned No. 1 Ainsworth, Section 8-19-16, 8 miles west of El Dorado South Pool production as a dry hole at 2,182 feet, corrected depth.

SOUTHWEST TEXAS

(Continued from Page 56)

east line of A lease in the J. R. Robinson Survey; total depth 2,486 feet; flowing 1,800 bbls. per day.

ABANDONED TESTS

Duval County—Kohler Pool

Allied Gas Co.'s No. 1 J. T. Dinn, 1,500 feet south line, 1,500 feet east line Survey 668; total depth 3,005 feet; abandoned.

Guadalupe County—Darst Creek

United North & South Development Co.'s No. 3 P. Roamel, in the J. R. Robinson Survey; total depth 3,638 feet; abandoned.

NEW LOCATIONS

Bexar County—Dobrowolski Pool

Penn Tex Oil Co.'s No. 2 Dobrowolski, 450 feet from south line, 150 feet from east line, west 67 acres of 147-acre tract in the M. Menchaca Survey, 5 miles southeast from San Antonio; total depth 460 feet; drilling.

Swearingen Oil Co.'s No. 1 Fee, 151 feet from north line, 1,174 feet from east line of 100-acre tract in the M. Menchaca Survey, 5 miles southeast from San Antonio; total depth 700 feet; 6 bbls. per day.

Caldwell County—Lytton Springs Pool

Cranfill & Reynolds' No. 2 M. L. Strown, northwest corner of survey in the P. Martinez Survey; total depth 1,839 feet; pump 5 bbls. per day.

Caldwell County—Bruner Pool

Humble Oil & Refining Co.'s No. 5 T. Briscoe, 1,150 feet from west line, 150 feet from north line of 56-acre tract in the J. Hinds Survey; location.

Webb County—Cole Pool

South Texas Producing Co.'s No. 1 Perez-Leal, 150 feet west line, 2,492 feet north line, Survey 667; rigging up.

Nueces County—Agua Dulce Pool

Agua Dulce Oil & Gas Co. and South Texas Producing Co.'s No. 1 J. A. Daudermann, 640 feet south-north line, 640 feet west-east line of Block 14 or the SE quarter of Section 32, Benton Pasture subdivision; location.

Zapata County—Jennings Pool

A. L. Edgington's No. 2 Trevino, 490 feet east line, 150 feet south line, Block 26, Survey 412; location.

South Texas Production Co.'s No. 9 Measles and others, 3,830 feet southeast line, 660 feet northeast line. Cerrito Blanco Grant; location.

Guadalupe County—Darst Creek

Cranfill & Reynolds' No. 2 Appling, 50 feet each way south point 111-acre tract, offset Magnolia's No. 1 Appling in the James Hodges Survey; total depth 2,330 feet; preparing to set casing.

Humble Oil & Gas Co.'s No. 12-A Denman, 150 feet south line, 300 feet west of No. 11-A in the E. S. Emmett Survey; total depth 1,600 feet; drilling in shale.

Sun Oil Co.'s No. 6 Knoblock, 150 feet from north and east lines of 75-acre tract in the J. R. Robinson Survey; total depth 1,500 feet; drilling in shale.

F. L. Thompson's No. 1 Posey, 150 feet from northwest corner of Posey 71-acre tract S in J in the J. R. Robinson Survey; derrick.

DRILLING ACTIVITY

Guadalupe County—Darst Creek

Empire Gas & Fuel Co.'s No. 1 Knoblock, 150 feet northeast and southeast lines of 40-acre tract in the J. R. Robinson Survey; total depth 2,516 feet; set casing. Same company's No. 1 Henry Willie, 150 feet north line, 150 feet west line of tract in the J. Darst Survey; total depth 2,610 feet; drilling in.

Humble Oil & Refining Co.'s No. 11-A Denman, 1,921 feet west of southeast corner, 150 feet north-south line of survey in the A. S. Emmett Survey; total denth 2,420 feet; drilling in lime. Same company's No. 1 Sally Wilson in the J. C. Darst Survey, 150 feet from north line, 183 feet from west line; location. Same company's No. 4 Sallie Wilson, 500 feet east of No. 1, 2,150 feet north line of tract in the Jacob Darst Survey; derrick. Same company's No. 1 Yates Wilson, in the Jacob Darst Survey, 150 feet from north and west lines of tract; location.

Magnolia Petroleum Co.'s No. 1 L. V. Echols, 150 feet to northwest and southwest lines of farm, 3,650 feet to southwest, 3,220 feet to northwest of survey in the James Hodges Survey; total depth 2,715 feet; shut down; water. Same company's No. 2 L. V. Echols, 150 feet to southwest and southeast lines of lease, 300 feet southeast of No. 1 well, 164½-acre tract in the James Hodges Survey; total depth 2,845 feet; shut down; dry. Same company's No. 1 Roamel, 150 feet each way out of southeast corner of M. E. Roamel 50 acres, center of J. R. Robinson Survey; total depth 2,220 feet; drilling in shale. Same company's No. 2 S. M. Roamel, 150 feet each way from northeast corner of 40-acre tract in the James Hodges Survey; location.

Simms Oil Co.'s No. 3 C. W. Manford, 300 feet southwest of No. 1, 225 feet from southeast line; location.

The Texas Company's No. 3-A Knoblock, 626 feet northeast of No. 2-A; total depth 2,410 feet; drilling in lime. Same company's No. 4-A Knoblock, 300 feet northeast of No. 3-A; total depth 2,495 feet; drilling in lime. Same company's No. 3 Posey Baker, 1,510 feet from northwest line, 300 feet southwest line of tract offset to Humble's No. 9-A Denman in the J. R. Robinson Survey; total depth 2,090 feet; drilling in Taylor. Same company's No. 5 Henry Willie, 150 feet from north and east lines of tract in the J. C. Darst Survey; total depth 2,510 feet; drilling in lime. Same company's No. 6 Dallas Wilson, 150 feet from south and west lines of tract in the J. C. Darst Survey; location.

Bexar County—Dobrowolski Pool

Penn-Tex Oil Co.'s No. 1 Dobrowolski, 150 feet from south line, 150 feet from east line of west 67-acres of Dobrowolski 147-acre tract in the M. Menchaca Survey; total depth 520 feet; drilling in shale, gas and oil showing.

Caldwell County—Bruner Pool

Humble Oil & Refining Co.'s No. 4-B

J. R. Tiller, 180-acre south central part of lease in the J. Hinds Survey; location.

Duval County—Cole Pool

Cole Petroleum Co.'s No. 68 Rosa Benavides, 660 feet northeast line, 660 feet northwest line Cole subdivision, Mariano Arispe Grant, Block 11, Survey 14; total depth 2,000 feet; drilling.

Duval County—Kohler Pool

E. H. Buckner's No. 2 Peters, 1,980 feet south line, 660 feet west line Survey 161; total depth 1,700 feet; drilling.

Simms Oil Co.'s No. 9 Dinn, 660 feet east line, 660 feet south line of northwest of southeast of Survey 143; rigging up.

Everett Suladie's No. 1 Peters, 165 feet south line, 230 feet west line, Survey 33; total depth 2,400 feet; drilling; sand at 2,245-47 feet; dry.

Humble Oil & Refining Co.'s No. 41 Kohler, 2,970 feet south line, 330 feet east line, Survey 165; location. Same company's No. 43 Kohler, 825 feet north line, 165 feet west line, Survey 169; total depth 1,400 feet; drilling.

Duval County—Schoolfield-O'Byrne Pool

C. E. Long (Shell) No. 5 Hahl, 850 feet north line, 950 feet east line, Block 27, Survey 250; total depth 1,850 feet; drilling (location changed).

Starr County—Roma Pool

The Texas Company's No. 1 "B" V. C. de Guerra, 150 feet south line, 150 feet west line of north 1,173 acres, share 92, Porcion 68 of Partition Porcion 67-68-69-70-71-72, Jurisdiction of Mier; total depth 2,425 feet; drilling.

Webb County—Albercas Pool

O. W. Killam's No. 1 Bruni, 575 feet north line, 238 feet east line, Albercas Grant, Block 33; total depth 2,520 feet; hole cleaned.

Webb County—Carolina-Texas Pool

George S. Marshall's No. 2 Webster, 810 feet south line, 1,170 feet west line, Survey 684; total depth 2,147 feet; sand 2,142-47 feet; testing.

W. R. Shankle's No. 2 Webster, 1,170 feet west line, 150 feet south line, Survey 684; rigging up.

Webb County—Cole Pool

O. W. Killam's No. 18 Bruni; total depth 2,560 feet; drilling; sand 2,447-59 feet; tested 60,000,000 to 70,000,000 feet of gas; sand 2,480-84 feet; salt water.

E. H. Buckner's No. 1 "A" Rosa Benavides, 660 feet northwest line, 660 feet northeast line Cole Petroleum Co. Subdivision, Mariano Arispe Grant, Block 5, Survey 14; total depth 1,613 feet; sand 1,609-13 feet; salt water; standing.

W. E. May's No. 1 Volpe, 660 feet east line, 840 feet south line, Block 15, Survey 694; total depth 2,300 feet; set 6⅝-inch casing at 2,279 feet; sand 2,279-84 feet; shale 2,284-95 feet; sand 2,295-2,300 feet.

Magnolia Petroleum Co.'s No. 2 King-Harper, Block 2, Survey 323, 660 feet north and east lines; location.

Zapata County—Jennings Pool

Killam-Duggan's No. 13 Cuellar, 1,011 feet northwest corner, 150 feet southwest line, Survey 278; total depth 1,120 feet; drilling.

W. R. Shankle's No. 1 E. Gutierrez, 150 feet northeast line, 3.014 feet northwest line, Share 4, Fansler Partition Comitas Grant; rigging up.

Livingston & Twiss' No. 1 Trevino, 150 feet north line, 150 feet west line, Block 7, Survey 66; spudded in.

F. M. Blair and F. M. Blair, Jr.'s No. 3 Trevino, 500 feet east line, 150 feet north line, Block 1, Survey 66; location (formerly carried as Claggett & Blair).

A. L. Edgington's No. 1 Trevino, 150 feet south line, 150 feet east line, Block 26, Survey 412; total depth 1,250 feet; testing; set 6⅝-inch casing at 1,238 feet; sand 1,234-37 feet; rock 1,237-39 feet; sand 1,239-42 feet; rock 1,242-46 feet; sand 1,246-50 feet; running tubing.

O. W. Killam's No. 17 Cuellar, 600 feet north line, 940 feet east line, 160-acre Cuellar tract out of 1,772-acre Cerrito Blanco Grant; moving location.

R. F. Blankenship's No. 2 Garza, Block 2, Survey 413, 425 feet west line, 425 feet north line; total depth 1,200 feet; drilling; sand 901-907 feet; tested dry.

G. F. Owen's No. 2 Monte, Mayor, 820 feet east line, 150 feet N line, Block 7, Survey 64; total depth 500 feet; standing.

Brooks County—Lasater Field

Houston Oil Co.'s No. 1 Holbein-Wormser in the Palo Blanco de Maguellas Survey, 330 feet north line, 6,540 feet east line direct offset 660 feet south of No. 1 Lasater; total depth 4,948 feet; cored and tested sand; tested salt water.

Victoria County—Nursery Field

Humble Oil & Refining Co.'s No. 3-A Jay J. Welder in the D.L.&C. Survey, 1,634 feet southeast lines, 736 feet southwest lines, 1½ miles from Nursery; drilling below 6,000 feet.

CANADIAN FIELDS

(Continued from Page 60)

No. 16, LSD 2, Section 12-20-3w5, is drilling 1,457 feet in the lime at 6,160 feet; this is now the second deepest footage in the central area and the deepest yet drilled geologically, having reached a slightly greater depth in the lime than McLeod's No. 4 attained.

G. H. Smith, vice president of Imperial Oil, Ltd., in a recent statement declares there is no foundation for the persistent report that Imperial Oil, Ltd., contemplates withdrawing from the Turner Valley Field. Such a course, Mr. Smith states, would be impossible for the reason—even if none other existed—that a perpetual contract is in existence under the terms of which Imperial Oil is obligated to supply the city of Calgary with between 2,000,000 and 3,000,000 feet of gas per day. As a matter of fact Imperial Oil has no idea whatever of curtailing its operations in the Turner Valley Field. It is carrying out its program as usual, and, in all, 23 wells are in progress, of which six are on the Royalite, three on the Mayland and three on the Home acreage.

South Turner Valley

In the South Turner Valley, several independent tests are working in the deep lime horizon. In Section 20-19-2w5, Freehold Oil Corp.'s No. 2, LSD 8, got a fair initial gas flow 60 feet in the lime at 4,155 feet and is drilling deeper, after setting up separator. The test has a 10-inch hole in the lime and is rattailing as a precaution against a sudden burst of gas. Wellington Oils' No. 1, LSD 1, is at 4,567 feet and standing after re-cementing 30 feet in the lime. The test has some wet gas and a little naphtha has been bailed. Calmont Oils' No. 12 is rigging up.

Homestead Oils' No. 1, LSD 5, Section 16-19-2w5, is drilling 141 feet in the lime at 4,426 feet depth, with a small show of gas.

Merland Oils' No. 1, LSD 13, Section 27-18-2w5, which last December encountered a strong show of wet gas in the Dalhousie sands is building new derrick preparatory to resuming at 4,470 feet. The gas flow, estimated at 14,000,000 feet a day failed to hold up, and the test will be deepened to the lime.

Central Turner Valley

In the Central Turner Valley, some new drilling activity is in sight. British Dominion Oil Development Corp.'s No. 3 has been spotted in LSD 6, Section 12-20-3w5. Cellar is being dug about 600 feet southwest of No. 2 which is reported making around 120 bbls. a day from the deep lime. No. 3 will spud in early next month. Acreage is subleased from New McDougall-Segur Oil Co. on a minimum royalty of 20 per cent, the contract calling for four wells to be drilled by the British Dominion, each well entitling the latter company to 5 acres additional. Toward the north, Spooner Oils' No. 4 has cellar finished in LSD 14, Section 13-20-3w5, location being 400 feet north of Spooner's No. 2 producer in the north central part of the field. Test will spud in with cable tools within a few weeks.

North Turner Valley

In the North Turner Valley, Model Oils' No. 1, LSD 8, Section 22-20-3w5, drilling 30 feet in the lime at 5,830, encountered a fair initial flow of wet gas, and is deepening. Invader Oils' No. 1, LSD 10, Section 9-21-3w5, is drilling at 4,655 feet. At this depth the drill is apparently still in the Benton shales. It is possible the test may be abandoned owing to the exceptional depth required to reach the lime, if more careful geological examination proves this.

Drilling in the Foothills

On the Highwood structure, Harmac Oil Lands, Ltd., of Vancouver, British Columbia, has taken over 3,000 acres, and is preparing to start a test this spring. A tentative location was made some time ago in Section 24-17-4w5, on the south end of the structure but somewhat west of Western Alberta's No. 1. Stonewall Oil Co. is preparing to start work on its No. 1 test on the Prince of Wales ranch this spring. Tentative location was made some time ago in LSD

Red Coulee Field

In the Red Coulee Field, southern Alberta, Cosmos Petroleum Co.'s No. 1 Thacker, Section 2-27-4w, on the Montana end of the structure, offsetting Vanalta's No. 1, drilled into the Vanalta sand at 2,545 feet. Test was drilled 5 feet into the sand with 4-inch bit and 5⅝-inch casing run to top of the sand. Early reports indicated a production between 50 and 10 bbls. a day, with the possibility the test might be drilled deeper for larger production. It is claimed the oil test 43 Baume, the Vanalta production testing around 33 Baume. It is stated there is no water with the oil. This is the fourth commercial producer in the Vanalta sand. Vanalta's No. 2, LSD 3, Section 4-1-16w4, on the Alberta side has been placed on the pump. Swabbing tests showed between 60 and 100 bbls. a day.

On the Montana side, Monalta Oil Co.'s No. 2 Buckley, Section 1-37-4w, is making new hole below 2,335 feet after running casing and logging 15 feet higher than Cosmos' No. 1. It should get the Vanalta sand in about 200 feet. Mid-Continent Oil & Refining Co.'s No. 2 Farbo, Section 2-27-4w, is drilling below 1,400 feet.

Southern Alberta Exploration Co.'s No. 1, LSD 8, Section 3-1-16w4, has let drilling contract to Union Drilling Co. of Calgary. William Maughan is moving an outfit from Turner Valley for the test which will spud in about April 1. Devonshire Oils' No. 1, LSD 3-4, Section 10-1-16w4, is reported working on derrick. Dalco Oil & Gas Co.'s No. 1, LSD 4, Section 11-1-16w4, is erecting steel derrick for a cable tool test. The drilling agreement provides for the first test to spud in early in April, with three other tests to follow at 60-day intervals. Commonwealth Petroleums' No. 1, LSD 10, Section 3-1-16w4, is building derrick and bunk houses on acreage subleased from Alberta Pacific Consolidated. Capitol Oil & Gas Co.'s No. 1, Section 21-1-16w4, is reported working on derrick. Vanalta Oils' No. 3 has been spotted in LSD 3, Section 4-1-16w4. Alberta Pacific Consolidated's No. 1, LSD 2, Section 3-1-16w4, offsetting Vanalta's No. 1 to the east, has cellar dug.

Miller, Court & Co. of Vancouver are reported arranging with D. A. MacDonald and associates for development work on an 80-acre tract in LSDs 11 and 12, Section 16-1-17w4. Hargal Oils, Ltd., of Vancouver, British Columbia, which has a test drilling in the South Turner Valley, is also preparing to drill on the Red Coulee structure. Buffalo Oils, Ltd., of Calgary, with holdings on 12 different structures in Alberta, will drill its No. 1 test on the Red Coulee structure. Frank R. Lidgate is president. Pan Canadian Petroleums, Ltd., has been incorporated under Dominion charter with capitalization of 1,000,000 no par shares and office at Vancouver, British Columbia, and will drill in Section 17, northwest of the Vanalta producers. Arrangements have been made with an eastern Canada syndicate for further development, the syndicate subleasing 520 acres from Pan Canadian Petroleums. The arrangement calls for 10 wells, Pan Canadian Petroleums to receive 40 per cent royalty after costs of production. Officers of Pan Canadian Petroleums, Ltd., are: President, John Latta, Vancouver; vice president, David Whiteside, New Westminster; directors, J. R. Bazell, G. A. Grand, D. Spencer, E. C. Chadwick, Vancouver; A. K. McLean, Burnaby.

Borders Fields

In the Taber district, Cole-English Syndicate's No. 1, LSD 3, Section 11-10-17w4, is reported preparing to resume. Casing will be run to bottom at 3,300 feet and a test made of the crude oil showing reported some weeks ago. Structure tests have been drilled on the Sam Rombough and George Rea farms southeast and east of Taber. The syndicate has filed on 12,000 acres near Taber in addition to its previous extensive holdings.

In the Spring Coulee district, Alberta Pacific Consolidated's No. 1, Section 15-4-23w4, has finished camp and derrick and is reported starting to rig up.

Wainwright Field

British Wainwright Oils' No. 1, LSD 13, Section 20-46-6w4, is reported on the pump, and making a fair production of heavy crude. Production is being taken by Associated Refineries, Ltd. Senator Oil & Gas Co.'s No. 1, Section 23-44-6w4, is preparing to start work. Fabyan Petroleums, Ltd., is reported placing rotary equipment for its No. 3 test, offsetting the Imperial "mystery" well. Oil Selections' No. 1, LSD 13, Section 2-46-7w4, on the Shewchuk farm has heavy duty rotary outfit rigged up and will spud in shortly. Wainwell Oils' No. 4, LSD 9, Section 36-44-7w4, which has been pumping about 20 bbls. a day net is reported shut down pending the result of merger negotiations.

On the Saskatchewan end of the Ribstone structure, Darlington Oils, Ltd., of Regina, Saskatchewan, is arranging for a test in Section 34-46-28w3.

In the Pigeon Lake district west of Wetaskiwin, two tests are likely to be started this spring. Peace Hill Oils, Ltd., has a test scheduled to spud in by June 1, and Premier Drilling Co., which last year made a location, is reported arranging for equipment.

Northern Alberta Test

In Northern Alberta, Waterways Oils, Ltd., is preparing to start work this spring in the Clearwater district, where a shallow test was drilled by Weymarn Brothers a couple of years ago. The Weymarn test was carried to around 500 feet, and was reported to have got a fair show of heavy crude. J. P. Hughes left Edmonton recently for Waterways to look after the preliminary work. The location is on the Clearwater River 40 miles east of McMurray. Materials will be hauled by team to location from Waterways over the river ice, and it is planned to have everything ready to spud in by the time the spring break-up occurs. Waterways Oils' No. 1 is located in the center of the Clearwater Field and standard tools will be used.

British Columbia Prospects

Though the only active drilling in British Columbia at present is in the Sage Creek district, activity is being shown in the search for oil prospects in other parts. J. W. Mulholland of Cranbrook, British Columbia, has spent a couple of years investigating the Mayook and Elko districts, discovering some oil seepages and oil shale outcrops, and has outlined an oil-bearing cretaceous belt some miles east of Cranbrook. Mulholland has leased acreage near Mayook and west and south of Elko, and is arranging for development.

The government is being asked to send a geologist to investigate oil indications near Kelowna, British Columbia, where a local syndicate is planning to drill for oil.

Ontario Drilling

In Dawn Township, Lambton County, Ontario, Union Natural Gas Co.'s No. 45, Lot 16, Concession 1, is drilling around 1,600 feet without a show.

In Oxford Township, Kent County, Oil Selections, Ltd., of Toronto, has leased 1,052 acres of the Moraviantown Indian Reserve adjoining the recent shallow oil strike of Basic Resources, Ltd. Several shallow tests will probably be drilled. In the Bothwell Field, north of the River Thames, Olga Oil & Gas Co.'s No. 2 deep test is reported to have drilled through the Trenton limestone without encountering gas or oil.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

READY FOR IMMEDIATE SHIPMENT—PRICED RIGHT
50 MILES 4" O.D. PLAIN END PIPE
11 MILES 12" O.D. PLAIN END PIPE
15 MILES 4" STD. SCREW PIPE
60 MILES 2" STD. SCREW PIPE
All sizes in casing and line pipe from 2" to 15¼" inclusive.
PRODUCERS PIPE & SUPPLY COMPANY
309 Kennedy Building
Tulsa, Oklahoma.

FOR SALE. 8 Sweetland Filter Presses, No. 12, No. 10, No. 9, No. 7, No. 2; 1—300 H. P. Scotch Marine Boiler; Miscellaneous—Compressors, Storage Tanks, Pumps. CONSOLIDATED PRODUCTS COMPANY, 17-20 PARK ROW, NEW YORK CITY. BARCLAY 0600.

FOR SALE—MACHINE TOOLS
Bargains in used and rebuilt lathes, shapers, drill presses, pipe machines, milling machines. Five hundred machines in stock. Terms to responsible parties. Write for catalog.
Cincinnati Machinery & Supply Co.
26 West Second St., Cincinnati, Ohio.

FOR SALE—Used Machine Tools and shop equipment in stock for quick delivery. Terms if desired.
HUEY & PHILP
Dallas, Texas

FOR SALE
Standard rig and string of tools. Or will trade for proven acreage or royalty. Dorsey E. Straitiff, Box 592, Casper, Wyo.

FOR SALE—Used Pipe and Casing. 7,000 feet 6⅝-inch 24 lb. LW, 12,000 feet 4-inch 8-Thd. Line.
Elliott Machine & Supply Co.,
Depew, Okla.

TWO 36" and two 27" Carbondale wax filter presses; two 20-ton, one 50-ton Carbondale refrigerating machines; 2,000 wax pans; assortment of misc. cast iron pipe, 4" to 12" Universal, flanged end, and bell end spigot; assortment of misc. cast iron and steel valves and fittings; numerous other items.
MID-CONTINENT EQUIPMENT, INC.
434 Continental Oil Building
Denver, Colorado.

FOR SALE two size E Cyclone Tractor Drilling Machines, complete with tools. Good condition. Also leases for sale in Southeastern Ohio, Pennsylvania Grade oil district. Address, H. C. Farmer 58½ South 2nd St., Newark, Ohio.

TANK CARS—FOR SALE

Eight thousand gallons, now in gasoline service. Inspection at Houston, Tex.

Bargain Prices.

M. R. DUCEY RY. CAR CO.
Houston, Texas.

BARGAIN—Light Rotary rig; 45 h.p. boiler; 1,500 ft. good drill stem; all in fine shape. Located 50 miles Houston, Tex. Write Mr. Russell, DeMenil Bldg., St. Louis, Mo.

GASOLINE TRUCK train for sale. Powered by White model 59 truck, Fruehauf semi with 2,500 (3 comp.) gallon tank and Fruehauf four wheel with 2,000 (2 comp.) gallon tank. Air Brakes. 40x8 Pneumatic tires on all wheels Duals on all but front of truck. Equipment used two months. Will sell at great sacrifice. The Mead-White Motor Truck Co., Odessa, Texas.

FOR SALE OR TRADE
Reconditioned pipe, casing and Oil Field Supplies. Also Gasoline Plant Equipment. Lee Morrison Supply Co., Bartlesville, Okla. Branch yd. at Sand Springs, Okla.

READY FOR SHIPMENT
Three Miles 4" Std. Screw Pipe.
Five Miles 3" Std. Screw Pipe.
Four Miles 2" Std. Screw Pipe.
Priced To Sell.
The LaDow Gas Co., Fredonia, Kansas.

FOR SALE—EQUIPMENT

FOR SALE—Large Spudder; complete string of tools. Waukesha motor. No. 2 National machine; tools and oil engine. Stalker Oil Company, Cisco, Tex.

FOR SALE
Two No. 28 Star Drilling Machines.
One No. 32 Keystone Drilling Machine.
Complete with tools and boilers.
The LaDow Gas Co., Fredonia, Kansas.

FOR SALE—Rotary Drilling Outfits can be bought at a bargain. Tools that are now drilling and have just finished wells in Seminole Field. Write P. O. Box 1257, or phone 555, Wewoka, Oklahoma.

BARGAIN FOR QUICK SALE
1—800-lb. Morgan Steam Hammer.
1—1,500-lb. Morgan Steam Hammer.
1—2,000-lb. Bement Pond Steam Hammer.
1—18"x10' Bradford Lathe.
1—28"x14' New Haven Lathe.
1—33"x16' S. W. Putnam Sons Heavy Duty Lathe.
3—Oil Tempering Tanks and Coils.
1—Oil Storage Tank.
1—Deming Oil Pump and Compressor.
1—Oil Meter and Strainer.
1—Economy Oil Furnace 58"x58"x81" L.
5—Jib Cranes.
Phone or write
L. T. LeBow, Trustee,
Joplin, Mo.

EQUIPMENT WANTED

WANTED PIPE THREADING MACHINES to cut 1" to 4" and 5" to 10" direct connected with motors. Lima Pipe & Supply Company, 268 Pearl Street, Lima, Ohio.

BUSINESS OPPORTUNITIES

OIL LOCATED before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo Tex.

A NEW CABLE-TOOL BIT, patent 1698873, designed for soft or sticky formations, to compete with a rotary in speed. I have been using one similar for four years on a small machine with wonderful success and now want it introduced. Other interests prohibit me giving this my personal attention, so would like to make a deal with some responsible party to handle patent on percentage, or would sell outright. Contractor, if you want to try me out, will send dope to any tool shop. Patent brokers save your stamps. R. Burke, 225 Oxford, Lindsay, Calif.

WE ARE BUILDING FOR THE FUTURE
Pool your royalties with a growing company and build with us. Let us know legal description and location of your royalties and we will make you a proposition.
CONTINENTAL ROYALTIES, INC.
Box 1585 Amarillo, Tex.

MINERAL RIGHTS FOR SALE
170,000 acres northern New Mexico. Some coal. Structure favorable for oil. K. A. Heron. Chama. N. Mex.

ATTENTION: MANUFACTURERS desiring representation in Mid-Continent Field. We cover the territory and have complete office and warehouse facilities. We can handle an additional line for production or refining trade that has merit. Our business is selling. Write Box E-127, The Oil and Gas Journal, Tulsa, Okla.

INQUIRIES WANTED
(By financially responsible operator) From Business and Professional men who are interested in Oil-Gas and Sulphur Development, and who can make investment of not less than $500.00.
P. O. Box 1232, Houston, Texas.

WANTED BROKERS to handle leases and royalties in 25 Texas Counties. General Investment Co., Box 774, San Angelo, Tex.

BUSINESS OPPORTUNITIES

I HAVE PATENTS pending on a distillation unit of my own design. Desire correspondence preferably with small producers who desire to branch out into the refining business cheaply. Address P.O. Box 83, Compton, Calif.

YOU can make BIG money helping to develop the gold mining industry of Colombia, South America. For particulars address Davidson, 201 First National Bank, Denver, Colo.

OIL holds alluring possibilities but SAFEGUARD your future by an investment in World's Most Profitable Natural Industry—SHEEP. Own your own. We care for them without expense to you and guarantee thirty per cent annual returns on your money. 25c brings you full information.
Bow Island Sheep Co.,
303 Alberta Corner,
Calgary, Alta.

FREE—Particulars about my oil and gas locating instrument. Write Box E-138, The Oil and Gas Journal, Tulsa, Okla.

OPERATORS with 8 or 10 bbls. shallow production. If you can use $1,000 cash, write us. Box 1208, Dallas, Tex.

FOR SALE—Whitetail Oil Syndicate Units, at par $100.00, covering 47,000 acres, now drilling, N.E. Montana. Good geology. G. H. Lowe, Trustee, Neilsville, Wisconsin.

MEXICO—"Let's open our eyes to the opportunity next door," says L. W. Baldwin, President of the Missouri Pacific Railway. Have splendid developed equipped lead and silver mine in north Mexico, near railway, auto road and smelters. Owner obliged to sell account health. Great opportunity. Have had many years activity in Mining and Oil in Mexico. Examinations, properties and titles made. Sultana Co., 815 Maverick Bldg., San Antonio, Tex.

TO THE CONSERVATIVE INVESTOR: If you are looking for a good opportunity to make some real money then come to Arizona and look over the Gold Placer Field that is now being developed. For further information write Box 14, Kirkland, Arizona.

NEW MEXICO drilling blocks. Geology good. Box 85, Las Vegas, N. M.

COPPER AND GOLD MINING. Have several copper and one placer gold property. Need partner with from one to three thousand dollars help develop. Or will sell outright. Investigate. Write Box 585, Las Vegas, New Mexico.

GEOPHYSICAL APPARATUS

FOR SALE—GEOPHYSICAL APPARATUS. High-class electric seismograph registering acceleration. In first-class condition and complete for field use. "Expensive imported outfit." Sickness of owner reason for selling. An opportunity for competent geologist to form lucrative geophysical prospecting company. Write Box E-139, The Oil and Gas Journal, Tulsa, Okla.

POSITIONS WANTED

MR. EXECUTIVE—Do you need an assistant or a field man with 12 years practical experience in rotary and cable tool drilling, production and transportation? Graduate Mining Engineer. Location immaterial. Interview if necessary, or references furnished. Write Box E-130, The Oil and Gas Journal, Tulsa, Okla.

EXECUTIVE ACCOUNTANT
With eight years Oil Accounting Experience, desires connection with oil company where ability and experience will be appreciated. Age 33 and married. Available immediately. Address Box E-140, The Oil and Gas Journal, Tulsa, Okla.

DRAFTSMAN with 15 years experience in highway and railroad engineering and drafting, a little oil field drafting, desires position. Write Box E-142, The Oil and Gas Journal, Tulsa, Okla.

POSITIONS WANTED

STOCK AND DISTRIBUTION head of supply plant wishes to change location. Have a background of years experience in field and office of producing company, and correspondence contact with buyer. Write Box E-143, The Oil and Gas Journal, Tulsa, Okla.

ELECTRICAL ENGINEER in design and supervision in oil refineries with plenty of practical experience desires position with responsible firm. Write Box E-134, The Oil and Gas Journal, Tulsa, Okla.

DRILLING SUPERINTENDENT at present employed by prominent oil company of Mexico, wishes to secure position with independent concern starting work in Central or South America. Expiration of contract reason for seeking new position. Can speak Spanish fluently and have knowledge of laws and customs of the countries. Widely acquainted in most of the capitals of South American Republics. Extensive experience in both rotary and cable tools in many sections of America and foreign countries. Recognized as petroleum engineer. Physical condition splendid. Age 30, married. Write Box E-141, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED
By man with 25 years' experience in natural gas development in leasing, producing, pipe lines, measurements and distribution. Now employed. Can give best of references. Can recondition and improve production in old wells. Write Box E-135, The Oil and Gas Journal, Tulsa, Okla.

EXPORT EXECUTIVE

Desires connection with manufacturer as Export Manager, New York or London representative. Has recently completed six years sales and survey work in oilfields of Europe, Asia and South America. Thoroughly familiar with conditions in all foreign fields. Wide acquaintance among field executives and New York and London offices. Write Box E-146, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

CHEMISTS WANTED
Large oil refinery, located near St. Louis, Missouri, requires the services of Chemists or Chemical Engineers for inspection, research and experimental work. To qualify, applicants must have at least a B. S. degree in chemistry or chemical engineering. Salary $150 to $180 per month, depending upon qualifications. In reply give full details of personal history, education and experience and send photograph. Write Box E-120, The Oil and Gas Journal, Tulsa, Okla.

MECHANICAL ENGINEER—Must be thoroughly experienced in design and operation of Refinery Equipment. Write full particulars. Answer Box E-132, The Oil and Gas Journal, Tulsa, Okla.

WANTED—SALES ENGINEER WITH TECHNICAL BACKGROUND. Prominent steel and Plate Fabricating organization wants capable Sales Engineer with technical background. Preferably one whose training has been chemical and mechanical, and whose past experience has been in artificial gas work, oil refinery work, or with a chemical manufacturing organization. Should have experience in the design of processing and storage equipment for refineries, chemical plants and utilities. If interested furnish full particulars and address Box E-144, The Oil and Gas Journal, Tulsa, Okla.

SALESMAN wanted by well established and reliable firm handling oil well supplies and specialties. Must be thoroughly conversant with wire rope and familiar with machine shop practices. Give qualifications, references, and state age. Confidential. Box 1112, Shreveport, Louisiana.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

HELP WANTED

WANTED: Young man with operating and engineering experience in the Oil Refining Industry, to become Sales Engineer for long established manufacturer of recording instruments and automatic controllers for temperature and pressure (both air and electrically operated types). Candidates preferred who have had both industrial experience and scientific education, and who are free to travel through the great industrial districts. Highest character references required. Write, stating experience, age, and salary desired. Write Box E-145, The Oil and Gas Journal, Tulsa, Okla.

EMPLOYMENT SERVICE

IF YOU ARE SEEKING a connection and have experience in the oil business write in confidence for details of our aggressive, individualized, contact service. Business Service Co., 30 years in Chemical Building, St. Louis, Mo.

OIL REFINERY Mech. Detailer, Designers, Chemists and Chemical Engineer Graduates. Calls daily. Write or wire, give age, exp. Interstate Co., Security Bldg., Denver, Colo., built through 26 years worldwide service. Largest in West.

LEASES—PRODUCTION

FOR LEASE—25,000 acres Prospective Oil Land in Coahuila, Mexico. Rights confirmed to owner by Mexican Government. S. R. Gonzales, Naranjo 2, Altavista. Tampico, Mexico.

TEXAS ROYALTIES—$2 base and up. Leases 20 cents and up. Cheap lands $2.50 and up. Send for interesting bargain list. General Inv. Co., Box 774, San Antonio, Tex.

LEASE FOR WELL—Located in NW of NW of Sec. 2, Twp. 1, in R. 3 west. Require deposit of $5,000 as guarantee. Full particulars to person who can qualify. Joe Milam, 206 Oil Exchange Bldg., Oklahoma City, Okla. Phone Night 4-1742, Day 2-8094.

LEASES TEXAS ROYALTY
Attracitve blocks, wildcat and semi-wildcat, 500 to 14,000 acres, Southwest Texas, with and without drilling obligation. Full information to corporations or individuals of responsibility. Corporation business solicited and given careful and confidential handling.
J. S. JONES,
San Antonio, Tex. Luling, Tex.
410 Builders Exchange Petroleum Bldg.

FOR SALE—Lease on Red Coulee Structure, Northern Montana and Southern Alberta's new sensational Oil Field. Many new wells to be drilled immediately. Field now in production. Write us for information. Northern Investments, 303 Alberta Corner, Calgary, Alberta.

OLD MEXICO
Several large tracts prospective oil land, also mines, for lease and sale. Also west and southwest Texas leases and blocks. A & M Petroleum Co., Box 599, El Paso, Tex.

FREE—6,000 acres in leases for the drilling of a well to 2,100 feet; shallow blocks of 400 to 600 acres free for a well. H. W. Mitchell, Parker, Kans.

FOR SALE—1,000-acre block leases in new shallow gas field located in Ohio. J. H. Harmon, 14 Massa Avenue, Mansfield, Ohio.

FOR SALE—25,000 acres, 10-year paid up leases, Uvalde, Edwards, Kinney, Bandera and Real Counties, Texas. No rentals. $1.35 per acre. L. W. Stieren, Alamo Bank Bldg., San Antonio, Tex.

ROYALTIES, LEASES and PRODUCTION in Oklahoma, Kansas, and Texas. L. J. Seay, Attorney, 319 Thompson Bldg., Tulsa, Okla.

NEW MEXICO OIL LEASES and royalties, large drilling blocks with favorable geology and small tracts for protection for sale cheap. Or will consider drilling proposition. San Miguel County has several wells drilling and more to start soon. Write Massey, Box 85, Las Vegas, N. M.

CHEAP LEASES, royalties, and drilling blocks for sale in South Texas coast counties where big oil play has just started. Address Ross E. Fenton, care Nueces Hotel, Corpus Christi, Texas.

LEASES—PRODUCTION

60-ACRE LEASE, Van Structure, NE $7 per acre. ⅛ of landowner's royalty free. Tyler, 1130 Cedar Hill Ave., Dallas, Tex.

FOR SALE
8,000-acre lease in west part of Menard County, Tex. Also have drilling blocks, leases, and royalties in Menard, Concho, Tom Green, Edwards, Irion and other good Texas counties. H. B. Opp, Menard, Texas.

OIL LEASES—Royalties for sale in Van Zandt County, Van Pool. R. G. Hendley, Grand Saline, Tex.

OIL LEASES for sale on one of the largest structures in Southeast New Mexico. Henry E. Meyer, 410 Kings Court, San Antonio, Texas.

OIL AND GAS LEASES for sale 20 miles east of Nowata, Okla.; also Parkersburg Rig on location. L. P. Martin, Fredonia, Kansas.

NEW MEXICO LEASES
Eighty acre leases Roosevelt County for $100.
Glenn Myers, San Angelo, Texas

ROYALTIES—PRODUCTION

FOR SALE—ROYALTIES. Belcones Fault, L. W. Stieren, Alamo Bank Bldg., San Antonio, Tex.

STEVENS COUNTY and other Western Kansas Counties and Beaver County and other Western Oklahoma Counties royalties and leases.
Sain and Company, Liberal, Kans.

ROYALTY INTERESTS, Van Zandt, Smith, Wood, Henderson, Anderson and Ector Counties, Tex. Lists and maps. James R. Haynes, Grantville, Kan.

ROYALTY BARGAINS in Oklahoma, Lincoln and Pott Counties for sale. American Inv. Co., 201 Elks Bldg., Oklahoma City, Okla.

PERPETUAL ROYALTIES
On structure and in the major company blocks, in northwestern Oklahoma. Woods, Harper, Major, Woodward and Blaine Counties.
G. D. Mansur
416 Equity Bldg., Oklahoma City, Okla.
Phone 7-2666

WIDOW WILL SELL 1 to 10 acres royalty Van Zandt County, Texas, under test. One-fourth acre $72, one-half acre $112, full acre $200. Possibly worth $5,000 acre in 60 days. Manley, 313 Herskowitz Building, Oklahoma City, Oklahoma.

BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

SEVERAL HUNDRED acres of royalty for sale in eastern part of Oklahoma County, Oklahoma. Advise me where you are interested. Shirley Thompson, Jones, Okla.

BUY ROYALTY. The royalty that sells for a few dollars today is the high priced production royalty of tomorrow. We have it at all prices. ELMER S. and FOX WOOD, 712 Herskowitz Building, Oklahoma City, Okla. Phone. 7-3514.

FOR SALE—Perpetual deeded oil royalty under major oil company leases located in the active areas of Lea County, New Mexico. Also five-year State oil and gas leases, low rental, small investment, easy terms; oil development map free. Monarch Inv. Co., Roswell, N. M.

FOR SALE—Royalty interests in Van Zandt, Smith, Wood and Henderson Counties. Van Pool, latest and biggest pool. G. M. Alsup, Grand Saline, Tex.

GOOD ROYALTY PROPOSITION
We want Eastern representatives to handle good royalty proposition. Wood Petroleum and Royalty Corporation, 712 Herskowitz Building, Oklahoma City, Okla.

INTERESTED IN BUYING half interest or less royalties in Northwestern Oklahoma and pay cash quick if priced in line and not mortgaged too heavily. B. H. Rowlett & Co., Tecumseh, Okla.

ROYALTIES—PRODUCTION

WANT producing, non-producing royalties Seminole Field; am interested drilling block close production. J. A. Harrison, 423 Kennedy Building, Tulsa, Okla.

I HAVE MADE LUCKY BUYS in western Oklahoma royalties and will sell small part at a low price. J. P. Crawford, Petroleum Bldg., Oklahoma City, Okla.

We Handle Oil Leases and Royalties.
RATLIFF AND CO.
630-31 Security Bldg. 3-7881; L. D. 594
Oklahoma City, Okla.

ROYALTIES IN ECTOR, Winkler and Pecos Counties, Texas. J. B. Azbill and Company, Inc., Paul Brown Bldg., St. Louis, Mo.

ROYALTY in McCurtain County for sale in large or small tracts, abstracts of title with each conveyance. Luther Calahan. Idabel, Okla.

WE WANT good oil and gas royalties. Send us full information with reports. U. S. Royalties Corporation, C. A. Johnson Bldg., Denver, Colo.

YATES POOL PRODUCING ROYALTY
One acre or more, section 10, block 194, Pecos County, Texas, for $300.
Glenn Myers, San Angelo, Texas

OIL ROYALTY
Half of sixteenth perpetual royalty Lee County, Texas. Close to big activity in Southwest Texas. If interested write H. C. Durkin, Mgr., Postal Telegraph Cable Co., Independence, Kans.

ATTRACTIVE SPREAD or group of 10,000 acres oil and gas leases in 21 Texas counties, at 50 cents. Also cheap royalties and fee lands. Brokers wanted. General Inv. Co., Box 774, San Antonio, Tex.

TEXAS ROYALTIES—$2 base and up. Leases 20 cents and up. Cheap lands $2.50 and up. Send for interesting bargain list. General Inv. Co., Box 774, San Antonio, Tex.

WE WILL SELL one half of the one-eighth royalty covering eleven thousand acres, Presidio County, Texas, at thirty-five cents per acre or seventy cents base. Non-participating deed. We will furnish certificate of title from attorney.
AMERICAN NATIONAL
BROKERAGE CO.
512 Southwestern Life Building,
Dallas, Texas.

BUY ROYALTY under drilling wells. Get quick action. Have royalty in proven and semi-proven Van pool, also under wildcat wells in Van Zandt and other counties. Jack Younger, 4626 Ross Ave., Dallas, Texas.

DRILLING BLOCKS in Bell County, Texas, and adjoining counties. A. L. Monteith, Belton, Texas.

ROYALTY FOR SALE, ¼ royalty 5-acre tract six miles Van Zandt County. Joins Major Company lease. Perry Blackwell, Ben Wheeler, Texas.

FOR SALE: Producing and close in royalty in the Oklahoma City Field. Investments $500 to $50,000.00. Maps and data on request.
W. M. GALLAGHER
Hersk. Bldg., Oklahoma City, Okla.

HAVE BUYER for settled producing royalties in Oklahoma. R. J. Hill, Route 4, Tulsa, Okla.

ECTOR, ANDREWS, GAINES. Active area and wildcat royalty. C. H. C. Anderson, Linz Building, Dallas, Texas.

INCORPORATIONS

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE incorporator. Charters fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

WANTED

WANTED TO BUY, abandoned Oil Lease, Pipe and Casing. Will pay cash. Post Office Box 1777, Houston, Tex.

WANTED: Small producing royalty. One or two barrels daily. Give location, full detail and cash price. Address Box E-122, The Oil and Gas Journal, Tulsa, Okla.

WANTED—To hear from parties having shallow production for sale or leases defaulting by rental payment. Preferably Kentucky. State details, price and geology. P. O. Box 506, St. Petersburg, Fla.

PUBLICATIONS

I HAVE A FILE of The Oil and Gas Journal commencing with December 7, 1911. This is complete down to date. It is for sale at a very reasonable price. Communicate with W. H. Gray, P. O. Box 1858, Tulsa, Okla.

MONEY RAISING

CAPITAL—An experienced, dependable broker will aid in financing propositions of merit. Amster Leonard, East Orange, N. J.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 2443 N. W. 12th. Oklahoma City

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security. Electric Bldg., Denver, Colo.

BULLETIN, containing information of priceless value to responsible parties seeking capital, yours upon request. Free analysis and advice cheerfully given. Moderate rates. Prompt. Service. Morris, Financing Specialist, 3608 Warren St., Philadelphia, Penna.

INQUIRIES SOLICITED FROM CORPORATION interested in raising capital through marketing of corporate securities.
THE BROOKWORTH CO., INC.,
110 East 42nd St., New York City.

CAPITAL!
We buy no stock, sell no stock; but worthy companies seeking capital through public financing will find most outstanding and dependable service procurable by submitting full facts to Robert S. Hansel, Inc., Dept. 402, Clarendon, Va.

REAL ESTATE

8,000 ACRES TIMBER LAND Issaquena County, Mississippi. Potential oil field. Sportsmen's paradise. Deer, bear, squirrel, coon, turkey, duck, trout. Three miles national highway 61. $7.50 acre. Barbour Realty, Vicksburg, Miss.

FOR SALE. 200 acres, Presque Isle County, Mich., Cheboygan District. Not far from Alpena, Boyne City and Charlevoix. Bargain. Need $500.00 cash; balance terms. Answer Box E-147, The Oil and Gas Journal, Tulsa, Okla.

240 ACRES, Crawford County, Mich., near Grayling. Will give bargain price if sold now. Write Box E-148, The Oil and Gas Journal, Tulsa, Okla.

RANCHES AND FARM LANDS

RANCH LANDS. Have several large ranch properties in New Mexico and Texas for sale cheap. Write Box 585, Las Vegas, New Mexico.

FOR SALE: Mountain Ranch, good hunting; also good fishing close by, good water, electric lights. For further information write to owner. Henry W. Schmidt, Kremmling, Colo.

FOR SALE—MAPS

OIL DEVELOPMENT maps, any county in Oklahoma and west Texas. 75c each. State, county and district maps showing oil development. Lindsay Map Co., Franklin Bldg., Oklahoma City, Okla.

ZINGERY OIL MAP CO.
Makers of famous Zingery abstract maps.
813 Throckmorton Ft. Worth, Texas.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township, plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

(ADDITIONAL CLASSIFIED WANTS ON NEXT PAGE)

Chicago Market Continues Upward

Movement of Kerosene Shows Increase. Inquiries for Industrial Fuel Oils Reported. Gasoline Movement Largely on Contracts

By J. B. Waldo

CHICAGO, Mar. 24. — The gasoline market continues to move upward and to gain in strength largely as the result of a consumption that is still in excess of the same period of last year. The less favorable weather of the week-end did not bring about quite as large a distribution as a week ago. There was a sprinkling of spot orders in this market today but the bulk of the movement was on contracts which are favorably reported by every major and many smaller refiners. The majors continued to quote a nominal price of 6½ cents for U. S. Motor gasoline, other sellers quoting from 6 to 6¼ cents for prompt shipment. There are still some quantities of gasoline for March delivery available and it is no uncommon thing for a buyer of a single or a small number of cars to be quoted a lower price by some dealer who has the material to move than the buyer can secure from a refiner. Refinery prices for resale and in some cases to the trade direct ranged from 6⅛ to 6¼ cents. The higher gravities were dull today.

The movement of kerosene is showing a healthy increase, all refiners reporting a larger business last week than for the one preceding and their expectations are for an increased demand unless the higher prices now asked check the movement a little. The major refiners were quoting 4½ cents as their minimum price with kerosene selling at 4¼ cents in the spot market.

Furnace oils were quiet and what buyers were in the market asked concessions from prices but on the whole the situation is getting in better shape as many of the contracts have been closed up and are out of the way.

Industrial fuel oils were inquired for by quite a number, some of the inquiries coming from concerns whose contracts had expired and who are now buying in the spot market. On the other hand some material is coming on the local market from refiners who have been out of the market for several months and who state that while they have not changed their plan of operation they may have some heavy industrial fuel oil to sell from time to time provided the prices are not too low.

The outlook as reported by the weather man for the week is for rain at intervals over the territory with normal to low temperatures which may check the gasoline consumption to some extent. Jobbers report that they have larger stocks than at the beginning of the month and are in position to wait for a larger demand before doing much buying.

Gasoline Movement Large

The movement of gasoline as reported locally last week was large for the season of the year. This is attributed to the weather although there is at present a tendency to increase the percentage of gain over last year which in December was estimated at not over 8 per cent. Gasoline consumption for 1930 has received a wonderful start during the season to date and it will require most unusually adverse conditions at some time during the season to bring about so small an increase for the season as 8 per cent. Several of the larger companies report that shipments to their own stations have been unusually large this month and while they state it is probable that some of the excess over last year is going into stock at the stations, still their sales reports are very satisfactory and in excess of 8 per cent by a considerable margin. There are some country distributors who claim that their present business is double that of a year ago but this is not general by any means and some very well known distributors have said that while their business was better than last year it was simply because of the weather. There was no dearth of offerings and reports indicated the refiners were still producing their full quantity of gasoline. Some has suggested that some refiners have not made the additions to their runs which they had planned to make at this time but stocks of gasoline continue to increase. The refiners were, however, holding pretty firmly for a price and it was only at the very close of the week when the cold wave over the Northwest and to some extent over the Central West tended to give a temporary check to the consumption that there were even offers to sell at any price. There was some interest shown by buyers in April deliveries and the present indications are that the month would average around 6¼ to 6½ cents for U. S. Motor gasoline out of Group 3. Refiners, if they want any April business to be closed in advance, will have to name some price the first part of this week and it is understood several have agreed to at least make a price for the first part of April.

Price Strengthened

The price of U. S. Motor gasoline gradually strengthened during last week. The increase was not great and the wisdom of slow advances is in the fact that there are such large supplies which might be released to the weakening of the situation here, if the price advance was sufficient to make the sale attractive to a refinery with full storage and supposedly able to use the cash which might be obtained in this way. Some of the larger dealers claim the increase in consumption, while the percentage is really good, has not been so large in bulk as to justify such large increases in refinery shipments as have been reported and that a considerable portion of these shipments have really gone into storage to come out later when the market is materially higher in price than at present. Salesmen report jobbers claim they have ample supplies for the present and there are other evidences the jobbers have been increasing their local stocks in preparation for the more active season of gasoline demand.

The demand was very largely for the U. S. Motor grade and for the 60-62 gravity with or without the 400 endpoint. So many of the larger distributors are now delivering 60-62 400 at their stations as their regular grade that their competitors are selling more of what used to be a premium gasoline. The price on the 60-62 400 endpoint also improved during the week but there was little change observable in the 64-66 375 which has become so largely an export grade and only moderate amounts are being sold in this market. The place has been taken by the antiknock motor fuels and especially Ethyl Gasoline. Our largest distributor of Ethyl Gasoline in this territory is reported to have doubled its sale of this motor fuel during January and February in spite of the fact that Ethyl Gasoline is now obtainable from many stations while formerly it was only to be had from this one company. Competition in the eastern part of this territory is very keen and refiners from all directions are competing for the business. California gasoline is being delivered in Ohio and is securing a remarkable following in some sections of that state. The Sun Co. has a large business in California gasoline in eastern Ohio and with the completion of the pipe line from Marcus Hook to the Ohio-Pennsylvania state line and beyond, will be able to increase the deliveries of this gasoline in its territory.

Kerosene is more active and a little stronger in price but there is no hint yet of any runaway market. There was some 41-43 kerosene selling at 4⅛ cents last week but not as much as during the previous week and many were holding for 4¼ cents as their minimum price with occasional figures of 4⅜ cents and even 4½ cents but the latter was not expected to get any business as yet. The Sun Co. was again offering some kerosene at 4¼ cents having dropped out of the market for a brief time.

Furnace oils were moving slowly, jobbers being reluctant buyers at this time of the year. They are ordering only single cars and some would appreciate some arrangement whereby an assortment of distillate, gas oil and light fuel oils could be shipped in a compartment car. There is a good deal of buying in tank wagon lots from fellow jobbers. There are ample supplies to be had and many refiners have more of the furnace oils on hand than they like but even low prices will not increase the movement right now. Good 38-40 distillates were to be had at 3 cents and the maximum price generally named was 3⅛ cents. Zero gas oil was selling at around 2¾ cents and the 28-30 fuel oil at 90 to 95 cents. The feeling is that while we may have some cool days there will be no really cold weather and any cool spells will be brief so that the trade is not greatly interested in furnace oils except to move as much of their present stocks as possible before the season really comes to an end.

Fuel Oils

Industrial fuel oils have moved along very much in the same rut as for several preceding weeks. Little of the heavy fuel oil offered in this market comes from Oklahoma at present. There are one or two refiners who apparently are not cracking or storing their fuel oil and they are seeking buyers, but ample supplies are to be had from Texas, Shreveport and the local refining plants that have accumulated sufficient fuel oil to make them willing to supply the needs of the local consumers and to an extent of the marketers who specialize in fuel oils. Many of the contracts made by these large local plants have not been taken out in full and extensions have had to be granted to avoid cancellations. This is only in part because of the mild weather which has so greatly reduced the quantity of oil used for heating purposes.

There is of course a considerable amount of fuel oil being consumed right along but it is much less than was expected and many who have made contracts for the purchase of certain quantities are not taking out the full amount. Many who had taken their quotas during all the preceding months did not do so in March as they state that they have sufficient oil on hand to last them for a while.

Another thing right now is the passing of the payment of premiums for zero oils and the gradual decline of the prices of these zero oils to the basis of the higher pour tests. The market price for 18-22 zero fuel oil is now not higher than 67½ cents and oils are offered in this grade at 62½ cents. It is said of them that they are made by a process which leaves lime in suspension in the residual oils and unfits them for certain work such as the burning of brick. For a 22-26 zero the quoted price of many is 75 cents but bidders have found it would not land a good order and so it goes right through the list, a demand which is not up to expectations and sources of supply who are anxious to reduce their stocks of heavy zero oils and are meeting buyers' ideas in some cases at least.

Lubricating Oils

Lubricating oils are moving more actively and heavy shipments are reported both of refinery stocks and of the compounded motor oils. Prices are generally very well maintained. Even the Eastern bright stocks which were easy have strengthened quite a bit.

New Q.D.A.

The newest matter in the tank wagon situation is the announcement of a new Q.D.A. in Chicago and vicinity. In a general way the discount is 5 cents for each buyer of 100,000 gallons during any one month but the different companies have such a varied assortment of discounts, no two being alike, that it looks like a war of Q.D.A.'s. One company applies this special discount of 5 cents a gallon to Chicago only. Another spreads it over a part of the territory. Another will allow it on purchases of 75,000 gallons. Each one hopes that the rivalry for Q.D.A. contracts does not extend but there is some doubt of the ability of any one company to restrain any such movement to a specific part of its territory.

There have been no changes at any important point in the territory. As to any general change in the tank wagon scale in this territory, if there is any early change in this list it will come from conditions not at present obvious in the situation. There are some who believe that the present scale will run through the season, but already some of the integrated companies who are not in position to make their own tank wagon scale are pressing for an increase.

ALBERTA GEOLOGISTS MEET

CHATHAM, Ontario, Mar. 22.—The Alberta Society of Petroleum Geologists held its second annual meeting at Calgary recently when the following officers were elected for 1930-31: President, B. F. Hake, Nordon Corp.; vice president, Prof. R. L. Rutherford, University of Alberta; business representative, D. L. Powers, Hudson's Bay Oil & Gas Co.; secretary-treasurer, J. G. Spratt, supervisory engineer's department. Papers were read dealing with "Minor Structural Features of the Plains," by D. L. Powers; "The Ribstone Oil Field," by A. J. Childerhouse; "The Alberta Syncline," by Dr. T. A. Link; "Geography of Alberta During Carboniferous Time," by Stanley J. Davies; "Experiments in Folding and Faulting," by R. K. Fields; "Structure of the Drywood Fault Block," by L. M. E. Kemniyzer; "Volcanic Ash Horizons in the Upper Cretaceous," by J. O. G. Sanderson; "The Blairmore Formation," by J. B. Webb, and "Structure of the Cypress Hills Area," by P. S. Warren.

Classified Wants

(Continued from Preceding Page)

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada.
Before disclosing your invention to anyone, send for blank form,
Evidence of Conception.
Bulletin "How to Establish Your Rights" and complete information free.

LANCASTER, ALLWINE & ROMMEL
240 Ouray Bldg., Washington, D. C.

INVENTORS who derive largest profits know and heed certain simple but vital facts before applying for patents. Our book, Patent-Sense, gives those facts. Free. Write Lacey and Lacey, 677 F Street, Washington, D. C. Established 1869.

Eastern Market Expected to Advance

Increasing Consumption Due to Favorable Weather for Motoring and Refinery Curtailment Stabilizing Situation

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Mar. 24.—Eastern gasoline markets have shown further improvement during the past week and the price trend appears to be definitely upward. Practically all of the refiners and marketers who had been selling U. S. Motor at concessions of a quarter to a half cent per gallon under the posted price have now marked their quotations up to the 8½-cent level, and the market appears to be gathering itself for an advance.

Tangible improvement is already thus early discernible from the "one-seventh refinery curtailment" program adopted by leading interests in the industry, and executives are hopeful this step will mark real progress toward the market stabilization which has been more or less vainly sought for several years.

Sharply increasing consumption, attributed to favorable weather conditions, has combined with the cut in refinery output to strengthen the improvement of gasoline in the East.

Developments affecting other refined produced have been rather meagre and the remainder of the market has not yet shown improvement comparable to that attained by gasoline.

Tank Car Gasoline

Definite improvement has developed in the tank car market and prices are higher. While the posted price remains unchanged at 8½ cents, refineries, advances of a quarter to a half cent have been put into effect by sellers who were formerly selling under the 8½-cent level. At the present time, all sellers in the New York area are on an 8½-cent basis, and with one exception the market at other points in North Atlantic territory has also worked up to this basis. One seller in Philadelphia is still reported offering at 8½ cents at refinery terminals for U. S. Motor.

Jobbers have come back into the market for U. S. Motor in a large way, and tank car movement has shown material improvement over that of recent weeks. Weather conditions have been extremely favorable and consumption is forging ahead steadily. In addition, market sentiment is quite bullish, and many distributors who had permitted their storage holdings to become greatly depleted have come back into the market and are filling storage in anticipation of a higher market in the near future.

The increasing confidence in the market position is shown by the inquiries reaching sellers for motor gasoline for April shipment. Major sellers have not yet established a quotation for next month's delivery, and it is a question whether they will be willing to book for all April at current going prices. The refinery curtailment plan, it is anticipated, will show definite and tangible results and will probably force refiners to draw heavily against storage once the season of heaviest consumption gets well under way.

California U. S. Motor is held at 8¾ cents here by one of the leading sellers, who has re-established the differential previously prevailing on the Pacific Coast motor fuel. Other sellers, however, are selling California U. S. Motor on a parity with eastern gasolines.

Competition in tank car markets, while keen, is not taking the form of price cutting as much as previously this year. It is expected this competition will now take the form of forward covering of distributors' requirements at attractive price levels, and because of this contingency, large marketers are hesitant in establishing their April quotations until they have an opportunity of thoroughly looking into the situation.

Fairly heavy shipments of California gasoline for East Coast markets are reported, but the position of the market on the Pacific Coast has firmed up somewhat and there is less selling pressure on California U. S. Motor for shipment eastward.

Tank Wagon Gasoline

Sales totals have shown sharp increases under the influence of better weather conditions, and markets have taken on a little more strength. There is less price cutting apparent in East Coast markets, this development being due not only to the broader demand, but to the firmer tendency of the refinery market as well.

While operators appear to believe an advance in refinery quotations is but a matter of time, it is not expected tank wagon and service station prices will move up immediately. The only immediate reaction on the retail market, it is expected, will be a rearrangement of prices to normal levels in certain "sore spots" in the territory, where unusually keen competition during recent weeks has forced local price cuts to meet the competition of local distributors.

Premium motor fuels are still meeting with a heavy demand in the retail markets, and the market is well sustained on all of the leading brands.

Kerosene

Moderate activity is reported in the refinery market, and leading refiners continue to hold the posted price at 7¾ cents, tank car lots. A number of smaller interests are going a quarter to a half cent per gallon under the posted price in some instances.

Refiners look for decided improvement in the market during the spring season. Demand, it is expected, will continue well up to normal, with the statistical position showing steady gains as production continues on a curtailed basis, in line with the one-seventh cut in throughput at refineries.

The tank wagon kerosene situation is without change. Demand is fairly well maintained, although warm weather had a tendency to curtail movement through retail outlets to some extent. There were no general revisions in tank wagon or service station schedules in this territory.

Lubs

Cylinder stocks have remained in easy position with prices unchanged at the reduced levels put into effect during the preceding week. Buyers apparently are not yet convinced that bottom has been reached, and even the bullishness engendered by the one-seventh cut in refinery runs on the part of many oil companies has failed to bring about the much looked-for improvement in buying of cylinder oils. Refiners are unwilling to go lower on prices at this time, and it is again a test of waiting powers on the part of the refiners and the buyers of their products.

Red and pale oil sales, on the contrary, have been well maintained during the period, with refiners reporting a good tank car movement. Prices remain steady and unchanged on all grades. Domestic consuming manufacturers are expanding their contract withdrawals somewhat, as manufacturing operations pick up, and export sales are more than holding their own.

Gas Oil

The market has shown little change during the week. The posted price is nominally unchanged at 5¼ cents at refineries, and although the undertone is slightly firmer, stocks are freely offering at 5 cents, with 4¾ cents by no means impossible.

Consumption is holding up well for this season, refiners report, and contract withdrawals are up to expectations. Domestic consumption is showing a slight falling-off, and this trend is expected to continue throughout the spring season.

Fuel Oil

Sentiment is definitely bullish in this branch. A good movement is reported, and bunker "C" is firm at $1.05 per barrel at refineries. Refiners here are watching the Gulf cargo market closely, as it is believed price movements at that point will have a decided bearing upon the East Coast market.

Diesel Oil

Refiners are holding the market firm at $2.00 per barrel, in bulk, at principal East Coast refinery terminals. A good bunkering demand for Diesel oil is reported, and marine sales thus far in the year are substantially in excess of those for the comparable period of 1929.

A number of large ocean-going yachts, of 1,000 d.w. tonnage and over, are going into service within the next two months, and the operation of these vessels coastwise will make for further increase in consumption of Diesel oil.

Market sentiment inclines to the belief that the Diesel oil market will reach higher levels before the year is out.

Paraffin Wax

The market position is still rather irregular. While sentiment has been improved by the curtailment of refinery operations, the large surplus holdings of eastern refiners constitute a bearish feature of the situation which buyers are not prone to overlook.

Trading has been along routine lines with buyers, both domestic and foreign, still operating in a hand-to-mouth way. Prices are unchanged at the reduced levels put into effect on fully refined grades during the preceding week.

Petrolatum

The market is without material change, either as to price or demand. Manufacturers of pharmaceutical specialties, such as sunburn creams, etc., are beginning to come into the market for their early requirements, and a steady improvement in buying from this source is anticipated.

Petroleum Exports

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Mar. 15	Mar. 8	Mar. 1
Gasoline	325,000	255,000	280,000
Naphtha	710,000	.....	1,665,000
Kerosene	125,000	12,000	127,000
Fuel oil	.....	6,000	35,000
Lubricating oil	2,790,000	960,000	1,272,000
Petroleum, refined	1,920,000	1,590,000	2,015,000
	Pounds		
Petrolatum	.....	54,000	184,000
Paraffin wax	730,000	2,068,000	2,040,000
Refined	12,000	180,000	560,000
Scale	630,000	241,000	1,435,000
Lubricating grease	1,598,000	1,340,000	875,000

Eastern export operators have been watching the market more closely, and it is believed considerable export business has accumulated during the quiet trading of recent weeks. Much of this business cannot be placed at this time, as sellers have materially firmed up in their price views since the early part of the month when the "one-seventh" curtailment program at principal refineries went into effect. Any real upward movement in the refined products market, it is believed here, would release a flood of this buying, much of which is still waiting some definite sign of real stability in the refined products markets.

Export Markets

The only development at the Gulf was an inquiry for a 6,000-ton cargo—2,000 tons of Navy and 4,000 tons of 64-66—for June shipment. Up to the time of writing, this cargo had not been closed.

A leading California refiner was reported to have closed on a 9,000-ton cargo of Navy gasoline for transatlantic shipment for April lifting. Two additional cargo inquiries were in the California market.

Fuel oil for export, in cargo lots, was firm at 70 cents per barrel at the Gulf, with quiet trading reported.

Export movement of refined products from the Gulf is expected to show substantial improvement during April, operators believe, basing this supposition on the hand-to-mouth character of buying by foreign distributors since the first of the year. Reserve holdings abroad, it is felt, are smaller than normal for this season of the year.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended March 15 totaled 1,988,000 bbls., a daily average of 284,000 bbls., compared with 1,836,000 bbls., a daily average of 262,286 bbls. for the previous week and a daily average of 295,464 bbls. for the four weeks ended March 15. Details follow:

(Barrels of 42 gallons.)

At Atlantic Coast Ports:	
Baltimore	80,000
Boston	59,000
New York	1,111,000
Philadelphia	487,000
Others	216,000
Total	1,953,000
Daily average	279,000
At Gulf Coast Ports:	
Tampa	35,000
Total	35,000
Daily average	5,000
At all United States Ports:	
Total	1,988,000
Daily average	284,000
Daily average four weeks	295,464

An early decrease in the import movement of both crude oil and refined products is looked for, in line with the one-seventh refinery curtailment plan in the United States. Standard Oil Co. of New Jersey has indicated it will reduce its imports by one-seventh, and it is expected other companies will follow suit as soon as their production and shipping schedules can be readjusted to conform with the present conservation activities. The trade is particularly interested in imports of gasoline at this time and import statistics covering the movement of motor fuel will be closely watched by eastern refiners, who must gauge their production to conform with the receipts of California and South American gasolines in their home marketing areas.

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended March 15 totaled 565,000 bbls., a daily average of 80,714 bbls., compared with 322,000 bbls., a daily average of 46,000 bbls. for the previous week and a daily average of 45,500 bbls. for the four weeks ended March 15. Details follow:

(Barrels of 42 gallons.)

At Atlantic Coast Ports:	
Baltimore	16,000
New York	186,000
Philadelphia	181,000
Others	157,000
Total	540,000
Daily average	77,143
At Gulf Coast Ports:	
Total	25,000
Daily average	3,571
At Atlantic and Gulf Coast Ports:	
Total	565,000
Daily average	80,714
Daily average four weeks	45,500

KANSAS FIELDS

(Continued from Page 52)

Section 13-32-9, is dry and abandoned at 1,400 feet.

Clay County

Skow and others' No. 1 Strut, SW cor. SE, Section 16-9-4, has been abandoned at 2,510 feet.

Cowley County

Shawver & Empire Oil & Refining Co. made location for No. 1 Seal, SE cor. NE, Section 2-30-4. Wakefield and others' No. 1 Moore, SE cor. NE NW, Section 18-30-5, has been completed for 6 bbls. in sand 2,863-69 feet. No. 2 Osborn, SE cor. SW NE, Section 18-30-5, is a dry hole at 3,340 feet. Minnehoma Oil Co. and others' No. 4 Denton, SE cor. NE SE, Section 4-31-8, made 100 bbls. in sand 1,965-86 feet. Crow and others' No. 1 Conrad, SE cor. NE, Section 8-32-5, has been completed for 250,000 feet of gas in sand 733-50 feet. Trees Oil Co.'s No. 1 Brubaker, C SW NE, Section 12-34-6, made 7,000,000 feet of gas in sand 1,068-97 feet.

Douglas County

Utilities Co. of Kansas' No. 1 Ott, SW cor. SE SW, Section 17-13-21, has been abandoned at 1,220 feet.

Ellis County

The Texas Company and Skelly Oil Co.'s No. 1 Shutts, NW cor. SE, Section 5-12-17w, is a rig under construction.

Elk County

Wyatt and others' No. 1 Baker, SE cor. NE SW, Section 10-31-10, made a 30-bbl. well in sand 1,985-2,005 feet.

Franklin County

Howard & Howorth's No. 2 Barton, C NE SE, Section 25-16-17, has been completed for 5,000,000 feet of gas in sand 1,210-26 feet.

Dickinson County

The Prairie Oil & Gas Co.'s No. 1 Rumold, NW cor. SW NE, Section 12-16-2, is dry and abandoned at 3,205 feet.

Greenwood County

The Prairie Oil & Gas Co.'s No. 3 S. M. Newhouse, SE cor. NE NE, Section 1-24-11, is rigging up. No. 1 N. Newhouse, NE cor. SE NE, Section 1-24-11, is also rigging up. Empire Oil & Refining Co. made location for No. 1 Nisbet, SW cor. NW NW, Section 6-24-12. Waltom Oil Co. staked location for No. 1 Nixon, SW cor. NW SE, Section 6-24-13. Harwood Oil Co. is building the rig for No. 1 Good, SW cor. NW NE, Section 36-25-9. Derby Oil Co. and others' No. 5 Young, NW cor. NE SE, Section 22-22-13, made 175 bbls. in sand 1,802-23 feet. Waltom Oil Co.'s No. 1 Berry, NE cor. SE, Section 34-23-13, is dry and abandoned at 1,775 feet. Sheedy and others' No. 3 Green "B," SE cor. NW NW, Section 12-23-9, made a 20-bbl. well in sand 2,340-74 feet. Empire Oil & Refining Co.'s No. 3 Edwards "B," SW cor. SE SE, Section 21-23-11, has been completed for 467 bbls. in sand 1,863-1,956 feet. Syndicate Oil Co.'s No. 3 Shook, NW cor. SW NW, Section 6-24-12, had sand 1,728-78 feet and made 290 bbls. Sheedy and others' No. 2 Dalton, C NW NW, Section 5-24-13, made 25 bbls. in sand 1,632-52 feet. Shull Drilling Co.'s No. 2 Allis, NW cor. SE NW, Section 17-24-13, has been completed for 15 bbls. in sand 1,591-1,600 feet. Bisagno and others' No. 2 Gilroy, SE cor. SW SW NW, Section 5-25-13, made 1,500,000 feet of gas in sand 1,480-90 feet. Empire Oil & Refining Co.'s No. 7 Hoggart, NE cor. SW NW, Section 9-25-13, has been completed for 42 bbls. in sand 1,457-70 feet.

Harvey County

Jolly & Ogg's No. 1 Hupp, SE cor. NE, Section 22-23-1w, has been abandoned at 3,535 feet.

Labette County

Veeder Supply Co.'s No. 1 Stonaker, CSL NE, Section 13-32-17, has been abandoned at 1,229 feet.

Leavenworth County

Forrester and others' No. 1 Yazel, CEL SE SE, Section 18-12-22, is drilling at 1,215 feet.

Linn County

Ferguson & Hiatt's rig is up for No. 1 Campbell, NE cor. SE SW, Section 22-21-22.

Lyon County

Aladdin Oil Co. and Phillips Petroleum Co. made location for No. 1 Ratcliff, SW cor., Section 29-20-10. Sheedy and others' No. 1 Reese, SW cor. SE, Section 16-20-10, is a dry hole at 2,401 feet.

Marshall County

Smicker & Simcox's No. 1 Dowrimple, C N ½ NW, Section 22-4-9, is dry and abandoned at 1,245 feet.

McPherson County

McPherson Oil & Gas Development Co. made location for No. 1 Robinson, C SE, Section 10-19-2w. McPherson Oil & Gas Development Co. and Shell Petroleum Corp. made location for No. 1 Giffin, C NW, Section 14-19-2w. Dixie Oil Co. and Amerada Petroleum Corp.'s No. 2 Flook, NE cor. NW NW, Section 1-20-2w, is a rig moving in. Harry Skelly and others' No. 1 Neufeldt, SE cor. NE, Section 19-21-3w, is rigging up. McPherson Oil & Gas Development Co.'s No. 1 Koehn, C SE, Section 12-20-2w, has been completed for 948 bbls. in chat 2,934-74 feet. Gypsy Oil Co.'s No. 1 Krehbiel, SW cor., Section 3-21-3w, Voshell Pool, made 1,024 bbls. in Wilcox sand 3,424-28 feet. Indian Territory Illuminating Oil Co.'s No. 2 Voshell, SE cor. NE NW, Section 9-21-3w, made 311 bbls. from Wilcox sand 3,400-09 feet. Shell Petroleum Corp.'s No. 1 Stuckey, NE cor. SE SE, Section 9-21-3w, swabbed 1,205 bbls. from Wilcox sand 3,363-70 feet. No. 2 Stuckey, NW cor. SE SE, Section 9-21-3w, made 1,175 bbls. from Wilcox sand 3,342-50 feet. No. 3 Stuckey, SW cor. SE SE, Section 9-21-3w, has been completed for 920 bbls. in Wilcox sand 3,363-70 feet. The Prairie Oil & Gas Co.'s No. 2 Stuckey, SW cor. NW SW, Section 10-21-3w, swabbed 1,290 bbls. from sand 3,379-83 feet.

Empire Oil & Refining Co.'s No. 20 Hess, SW cor. SE NW, Section 18-26-5, is dry and abandoned at 2,775 feet. No. 93 Koogler, NE cor. SW NE, Section 20-26-5, has been completed for 75 bbls. in sand 2,483-2,547 feet.

Marion County

Youker and others' No. 1 Riffel, NW cor. SW SE, Section 10-17-4, has been completed for 115 bbls. in sand 2,344-75 feet. Empire Oil & Refining Co.'s No. 1 Block, NE cor. NW SW, Section 27-19-2, is dry and abandoned at 3,035 feet.

Reno County

Independent Oil & Gas Co. and others moved rig material to the location for No. 1 Sophus, SE cor. NW, Section 31-25-4w. Gypsy Oil Co.'s No. 1 Hudson, C SE NE, Section 27-24-10w, has been abandoned at 4,620 feet.

Rice County

Tom Slick Oil Co. and others' No. 1 Schurr, NE cor. SW, Section 21-20-10w, Raymond Pool discovery well, has been deepened to 3,308 feet and swabbed 860 bbls. in 20 hours. Independent Oil & Gas Co.'s No. 1 Mezger, SW cor. NE, Section 21-20-10w, made 496 bbls. from sand 3,327-41 feet.

Sedgwick County

The Prairie Oil & Gas Co. is erecting the rig for No. 1 S. Bright, NE cor. SW NW, Section 1-26-1w, Valley Center Pool. Shell Petroleum Corp.'s No. 6 Fischer, NE cor. SE SE, Section 15-26-2, swabbed 698 bbls. from Viola lime 3,208-9 feet.

Shawnee County

Forrester and others' No. 1 Hummer, NE cor., Section 14-11-16, is dry and abandoned at 3,023 feet.

Stevens County

Argus Gas Co. made location for No. 1 Christopher, C SW, Section 11-33-39w. No. 1 Carpenter, C NW NW, Section 29-33-36w, has been deepened to sand 2,617-2,808 feet and made 8,000,000 feet of gas.

Sumner County

Shawver & Continental Oil Co.'s No. 3 Spence, C SE NE, Section 27-34-2, is drilling at 150 feet.

Trego County

R. E. Day and others' No. 1 Eaton, NE cor. NW SW, Section 2-11-21w, is dry and abandoned at 3,871 feet.

Woodson County

Denton and others' No. 1 Burger, SE cor. SW, Section 22-23-14, is dry and abandoned at 1,670 feet. Oko Oil Co.'s No. 2 Houghland, SW cor. NE NE, Section 2-24-14, has been completed for 35 bbls. in sand 1,647-57 feet.

MICHIGAN FIELDS

(Continued from Page 62)

the present depth. Drilling will be continued to the Niagara or other deep formations.

The Michigan Petroleum Co.'s No. 1 C. E. Moe, SE SE, Section 6-9n-13w, Chester Township, Ottawa County, continues to be the deepest well on this side of the state and one of the two deepest ever drilled in Michigan. It is now at 5,480 feet, according to John Linck, president of the company, and is drilling ahead. No shows of oil or gas have been encountered since a good show of gas in the Cincinnati series at 4,776 feet.

At least three and possibly five wells are drilling in Oceana County, where there has been more wildcat activity in recent months than in any other single section of western Michigan.

Edward DuVall is continuing his No. 1 Schultz, NW NW, Section 12-15n-18w, Golden Township, after striking salt water in the Dundee at 2,060 feet and it is now 2,100 feet.

Drilling has been resumed on the Allegan County wildcat of the National Petroleum Corp. which had a show of oil in the Traverse two weeks ago. Tests of the oil, according to Jacob Bolema, of Muskegon, vice president, show it to contain 38 per cent of gasoline, 8½ per cent of kerosene and 9 per cent of distillates. The oil tested 38.9 gravity and was live oil. Casing was set at about 1,920 feet in what was thought to be the top of the Dundee limestone.

The well according to state permits is the Puritan Oil Corp.'s No. 1 Oliver W. Gere, NW NW, Section 13-3n-12w, Hopkins Township, Allegan County.

The Pure Oil Co. recently took out a permit for a new Allegan County wildcat in Overifel Township. The East Shore Oil Co. is starting a wildcat in Martin Township and the National Petroleum Corp. plans to drill a second wildcat in Salem Township. These four townships form a block of nearly 100,000 acres northeast of the city of Allegan.

New Permits

The two pioneer companies that opened the two leading oil fields in Michigan were granted permits for new locations, one in each field. The Muskegon Oil Corp.'s new well will be No. 6 Herman Heinz, SE SE NE, Section 8-10-16, Muskegon Township, on the Muskegon River flats. The Pure Oil Co.'s No. 3 Fred Sias, NW SW, Section 8-14n-2w, Greendale Township, Midland County, is the new location in the Mount Pleasant Field.

Permits for three other wildcats were issued as follows: Alfred Violette's No. 1 Sanderson, N half N half SW, Section 26-4s-7e, August Township, Washtenaw County, about 10 miles south of Ypsilanti; Salt Creek Oil Co.'s No. 1 Adams, NW NW NW, Section 4-13n-3w, Coe Township, Isabella County, south of the Mount Pleasant Field near Shepherd; and the Wolverine Development Co.'s No. 2 William M. Brown, SE NE, Section 12-33n-3w, Wilmot Township, Cheyboygan County, near the village of Wolverine.

Production Drops

Daily production of the Muskegon Field dropped below 5,000 bbls. for the first time in more than a year, according to estimates of R. G. Bechtel, field superintendent of the Dixie Oil Co.

Reports showed a daily production of 4,650 bbls. of Dundee and 290 bbls. of Traverse crude.

Mr. Bechtel's estimates of the rest of the state also show a lower total with Mount Pleasant making 7,650 bbls. of Dundee and about 30 bbls. of Traverse oil. Saginaw is producing about 218 bbls. a day, making a grand total for the state of 12,838 bbls. a day for the past week.

Only 75 per cent of the Mount Pleasant production is being shipped out and the rest is going into storage.

SAFETY ORGANIZATION

SHREVEPORT, La., Mar. 22.—A meeting of the safety section of the Louisiana-Arkansas division of the Mid-Continent Oil & Gas Association has been called for the purpose of organizing a Shreveport chapter of the Petroleum Safety Council. Executives of all companies operating in the Shreveport division have been requested to have a representative present.

CALIFORNIA FIELDS

(Continued from Page 64)

Co.'s No. 1 in Section 8-11-23, and the California Western Oil Co.'s No. 5 Havenstrite should also be completed in the near future. In the older section of the Midway-Sunset Field the Chanslor-Canfield Midway Oil Co. successfully completed No. 86 in Section 8-32-23, doing 316 bbls. per day from the Republic zone from a depth of 2,954 feet. Immediately upon completion of this project, the company spudded in a new well on the same property.

Mount Poso

Although crude oil production and drilling operations in the Mount Poso Field of Kern County have been substantially reduced in compliance with curtailment work, lease obligations require a certain amount of development work to be conducted from time to time. During the past week the General Petroleum successfully completed No. 28 Glide, a new well in Section 21-27-28, pumping 182 bbls. initially from 1,600 feet, the hole having been finished with an 8⅝-inch oil string carrying 87 feet of 80 mesh screen. Just previous to the completion of this well, The Texas Company successfully finished No. 4 Vedder in Section 4-27-28, doing 440 bbls. initially from 1,662 feet, the hole having been completed with an 8⅝-inch oil string carrying 73 feet of 120 mesh screen. The next well scheduled for completion in the Mount Poso Field is No. 8 S. & M. of the Union Oil Co., which is at present rotating ahead at 1,700 feet. No. 3 Gardner of the Petroleum Securities and No. 5 Glide of the General Petroleum should follow this well into completion within a short time.

Several new wells have been started in the Fruitvale Field of Kern County during the past few weeks and drilling operations in this district will probably remain more or less stationary because of lease requirements which preclude a complete cessation of work. The Shell heads the drilling list in this field with No. 2 K. C. L. at 4,365 feet, No. 1 Moore at 3,175 feet and No. 1 Shepherd at 2,582 feet. The Standard and Superior are each working on one drilling project at the present time. The former is down 4,674 feet in No. 5 on Kern County Land Co. No. 3, while the Superior is making hole in No. 1 Sheel at 2,600 feet. The Mohawk has landed a string of 8⅝-inch at 3,696 feet in well No. 7, located in Section 27-29-27, and this project should be completed in the near future. Out on the west front section of the Kern River Field the Chanslor-Canfield Midway Oil Co. is drilling ahead in No. 32 Fee in Section 23-28-27, at 2,080 feet. The Shell is making hole in two wells in the Round Mountain Field of Kern County but has rigs going up for three more on the Jewett property. Both of the projects under way in this field by the Shell are scheduled for early completion.

The Kettleman Hills Committee, under chairmanship of William Reinhart, vice president of the Shell Oil Co., met today in the quarters of the California Oil and Gas Association and discussed two plans of operation for the Kettleman Hills Field. The first, called the "Unit Plan," involves operation by an association and is permanent in character, the second, or "Co-operative Plan," is more or less temporary in effect and involves operation of properties by individuals or companies. Owing to the fact that the operators had not had sufficient time in which to study these plans, these was a request for further hearings before the Technical Committee, where questions, objections and suggestions might be submitted. Two weeks' time was allotted as the limit of time in which these briefs could be submitted. It will be the aim of the Technical Committee to arrive finally at a plan that will be satisfactory to all concerned.

Natural Gasoline Manufacture

Selecting Capable Employes Important In Plant Operation

By H. G. Stevenson*
Columbian Gasoline Corp.

In discussing this subject we will begin with the hiring of a new man and try to visualize the more important points that affect this new man until he is promoted beyond our supervision or until he is culled out and discharged.

The hiring of a new man is one of the most important duties that a plant supervisor has, and any means that will help the supervisor in selecting the right man for the job should be used. The points that I will bring out will seem to call for a great deal of effort and work on the part of the man who does the hiring, but in my estimation there will be ample pay in selecting good men for the new men of today will be the leaders of our organization in the future.

The new man will either be an asset or a liability to the company. A great deal depends upon the man, that is why we will discuss the many points to consider in hiring a new man. First there should be kept on record all men's names and addresses and as much information as can be gotten on first acquaintance, of all applicants. If information can be obtained on these men from mutual acquaintances, it will be found valuable, as that is a good way to judge as to how other people have formed an opinion of him. Reference letters have very little value except to give some one's address that other information can be gotten from. As for general character, I will say that I have found very few men who are wilfully crooked. There are some, of course, who will not go straight under any conditions, but they are easily picked in the first interview if care is taken to details of the statements they make.

The general health of the applicant and his family is another important point. Well men who have healthy families are more ambitious, industrious, agreeable, have less accidents and can concentrate on their work better.

Age should be considered. A man should be matured in mind and physique, but should not be so old that he would have the idea that his age and experience makes him superior to the younger men in the organization. As to the age limit I would think that 21 years as a mini-

(Continued on Page 150)

*Plant foremen's meeting.

FEATURE NATURAL GASOLINE

The Skelly Oil Co. will feature aviation gasoline made at their natural gasoline plants at the All-American Aircraft Show to be held in Detroit, Mich., April 5 to 13. The company won first prize for having the most attractive single booth at the St. Louis Aircraft Show last February and will have an entirely new and novel display at the Detroit show using twice the space occupied at St. Louis.

The Skelly company for some time has featured a specially fractionated natural gasoline for use as fuel in airplanes. The company will also demonstrate its low cold test lubricating oils for airplanes.

TEXAS BUYS PLANT

The Texas Company has purchased a small compression plant of the Continental Oil Co. located on the Waggoner ranch, near Electra in Wichita County, Texas. The plant will be dismantled and the gas run to the plant of The Texas Company, which is located one-half mile northwest of Electra. The latter plant has a capacity of 13,000 gallons daily.

Construction and Operation

PLANT LAYOUT FOR ESTIMATE PURPOSES*

In actual practice it is not always possible to make a thorough and complete survey of a new plant situation before a decision to build is made by the management. The situation may be so inviting on the face of it, or it may be "fairly good" but so competitive as to make it necessary to "shoot" on the basis of rule of thumb estimates of cost and returns. If a situation looms large and profitable on a normal market price, it is imperative that construction start without delay, for the gas cannot be conserved. If it is a highly competitive situation and yet is indicative of being worth while, it is often good policy to "strike out" for gas contracts. This decision cannot lightly be made for it involves the good faith of the company. It is difficult and generally bad business to tie up a number of leases and then "back off" of a situation. Rather is it best not to go in at all without a definite prospect of getting enough gas to justify a plant. Making good on a promise to take gas is simply another form of service. It is the stock and trade of the manufacturer.

The departmental manager's preliminary estimate for a plant will be made in any event either for the basis of a decision or as a matter of check with the engineers. While his estimate will be based in the main upon the gas tester's survey, the engineers' estimate will be based upon a survey on the ground and will take into consideration as nearly exact costs as may be obtained. The cost of moving the dirt for grading and clearing a site will be calculated, as will the cost of preparing the loading rack site. The ground will be studied from the standpoint of estimating pipe lining costs. Whether or not ditches for lines and foundation pits will have to be blasted is consequential as to labor costs. Definite hauling costs will be ascertained as a basis for figuring transportation of all incoming materials.

Another item to be looked into on the ground is the matter of accommodations for the construction force. If no town is located nearby, a complete camp must be provided with boarding house and appurtenances. If a town happens to be nearby, transportation to and from work may have to be provided according as the local labor situation may direct. Temporary power, light and water will also have to be figured in.

General Layout

Back in the office the engineers make the customary general layout of plant and camp according to a general plan laid out by the department head. It is a good plan for him to write a prospectus of the proposed plant for the guidance of the engineers. He is supposed to be informed as to whether the plant is to be of a more or less permanent character, whether or not there is to be a camp, and, if so, to what extent; whether auxiliary power will be provided or purchased, and if provided by the company, whether it will be steam, line-shaft, or electricity. He will specify how large the plant is to be and what the company's policy is at the time with respect to more expensive trimming so often done without during depressions in the industry.

With this as a basis, the engineers are ready for the research division's calculated requirements for the absorption and distillation units. They will obtain prices from a number of equipment manufacturers and will plan the purchase of that which it is indicated will give the best service at the lowest cost. It is considered good business to buy quantitative performance rather than so much metal.

Different sections of the plant are assigned by the chief engineer to his several men most familiar with the particular layout, and under his direction the several sections are "put together." Details of engines, pumps, etc., are not made if the installations are duplicates of older ones. From the prints, estimates are thereupon prepared, item by item.

The draft of the estimate is checked by the general superintendent and such items as he feels may be deferred are "blue penciled." It is not unwise to get the plant in and watch the field before installing items not vital to operations. These items can be added later, and if the field is an abortion, that money is saved.

Haste is to be encouraged and some waste incident to this hurried planning is to be condoned. The gas will not wait and if a plant is to be built, plans must be made and material must roll!

*Fifth of a series of articles explaining the inner workings of a natural gasoline organization. The series was prepared by an operator actively engaged in all phases of construction and operation.

Who's Who
IN NATURAL GASOLINE MANUFACTURE

GYPSY OIL COMPANY

The Gypsy Oil Co., with headquarters in Tulsa, is one of the large Mid-Continent manufacturers whose plants are all located in Oklahoma.

The company is a subsidiary of the Gulf Oil Corp., of Pennsylvania and its principal business is the production of crude oil in Oklahoma and Kansas fields. In its early history the company paid little attention to its natural gasoline operations. Plants of the compression type were operated on company leases. The compressed gasoline was usually mixed with the crude oil and transported by pipe line or tank car to refineries.

In recent years the company has followed the general trend and now its plants are built and operated with a separate department. In addition to the casinghead gas from its own leases the company buys gas in several fields. The plants have been modernized and the usual grades of finished products are obtained. These products are shipped in tank cars.

The company does not have to worry regarding outlets for the output of the plants. The gasoline is generally shipped to the refineries of the Gulf Refining Co., the largest of which is located at Port Arthur, Tex. Refineries are also operated at Fort Worth and Sweetwater, Tex.

The main operating office is located at Tulsa. In addition to the engineering and executive personnel, the plants are operated under the direction of H. R. Auerswald, general superintendent of plants.

Following is a list of Gypsy plants and their approximate daily output:

OKLAHOMA

Field location—	Daily capacity gallons
N SW, Sec. 16-17-12, Creek County	23,600
E NE, Sec. 5-17-7, Creek County	4,500
NE SW, Sec. 10-16-7, Creek County	2,900
SE, Sec. 1-21-7, Osage County	3,300
SW, Sec. 32-27-6, Osage County	18,000
NW, Sec. 2-24-1w, Noble County	5,800
NW, Sec. 11-14n-5e, Lincoln County	2,500
SE NE, Sec. 3-14n-8e, Creek County	2,600
S SW, Sec. 14-7n-6e, Seminole County	23,800
SE NW, Sec. 7-8-6, Seminole County	19,000
Total	106,000

7,000,000 GALLONS IN 1929 FROM DEEP WELL

Approximately 7,000,000 gallons of natural gasoline were extracted from the casinghead gas of the deepest well of the petroleum industry in 1929 according to an official report of the Signal Oil & Gas Co. of Los Angeles which operates a plant in the Big Lake Field of Texas through a subsidiary company known as the Signal Gasoline Co. of Texas.

The well is known as the No. 1-B University in Reagan County and is operated by the Group No. 1 Oil Corp. (Texon Oil & Land Co.). The well was completed at a depth of 8,525 feet in December, 1928. Starting with a production of 2,300 bbls. daily of 56 gravity crude oil the well is now producing 2,900 bbls. daily and 27,000,000 feet of gas.

The Signal company was operating a gasoline plant with gas from shallower wells at the time the deep well was completed and all the gas from the one well is now run to this plant. The company expects to materially increase this production before the end of the year. The Group One Oil Corp. is drilling two more wells to the deep sand and the gas from these wells will be available to the Signal company when completed.

The Signal company which operates both in California and the Mid-Continent also expects to increase its natural gasoline productions in other fields. In its annual report to stockholders, President S. B. Mosher stated:

"The company's natural gasoline department has continued to expand with the acquisition of new gas contracts and the further development of properties which are being drilled for deep sand production. At Los Cerritos, the westerly portion of the Signal Hill Field, wells have recently been brought in capable of a steady flow of 500 to 1,000 bbls. of oil with a daily flow of approximately from 500,000 to 1,000,000 feet of natural gas with a gasoline content of about 2 gallons per 1,000 feet.

"In the southeastern end of the Signal Hill Field, where the company holds a

(Continued on Page 149)

BUYS TWO PLANTS

The Phillips Petroleum Co. has purchased two natural gasoline plants in the Burbank Field of Osage County, Oklahoma. One plant located in Section 31-27-6, was operated under the name of Romarti Gasoline Co. The latter company was owned by the Continental Oil Co., Shell Petroleum Corp. and the Tidal Oil Co. The plant was built by the three companies several years ago and operated jointly since that time. It had a rated capacity of 10,000 gallons daily. The other plant purchased was a 1,000-gallon unit owned by the Mid-Kansas Oil and Gas Co.

The Phillips company will dismantle both plants. The casinghead gas will be run to plants of the Phillips company in the Burbank Field. The purchase adds 2,500 acres to the companys' gas reserves.

Brief Items for Petroleum Refiners

Variations in Q.D. A. Important Factor In 1930 Contracts

CHICAGO, Mar., 22.—Reports of varying discounts in Middle Western states allowed on quantity sales over any one month have been frequently mentioned but it is only recently that the companies have given out any variations from the regular scale as applied for several months in this territory. The addition of the bracket allowing a discount on sales of 100,000 gallons or over seems to have started more open competition and in a way, a regulation of the discounts. The discounts allowed in the Chicago district which extends from Gary on the south to Waukegan on the north and from the lake on the east to Wheat on the west, is general one-half cent larger than the discounts allowed in the remainder of the territory although there are some parts of the territory such as Detroit, where special Q.D.A.'s are in force.

The discounts for quantity sales over any one month in Chicago are from the service station price and are as follows: on 500 gallons, 2 cents; on 1,000 gallons, 4 cents; on over 50,000 gallons 4½ cents and over 75,000 gallons, 5 cents. In the country districts the discounts from the service station prices are on sales of 500 gallons or more, 2 cents; sales of more than 2,000 gallons 2½ cents; over 6,000 gallons, 3 cents; over 50,000 gallons, 4 cents and over 75,000 gallons, 4½ cents.

These discounts are really more attractive in some ways than a marginal contract. The jobber who operates under a marginal contract is supposedly receiving the full discount allowed to any jobber when he secures a contract allowing him a guarantee of 5½ cents under the service station. To enjoy the advantages of the contract he must have facilities for unloading tank cars and for storing a considerable quantity of gasoline. The advantages are, in the minds of several station owners, so evenly balanced that the making of these new and very liberal discounts on quantities has discouraged the signing of a number of contracts in this city.

PHILLIPS URGES UNIFORM POLICY IN TAXING AIRCRAFT MOTOR FUEL

Frank Phillips, president of the Phillips Petroleum Co. of Bartlesville, Okla., in a wire to the governors of 48 states urged them to consider the adoption of a uniform policy of taxation on gasoline used by aircraft. The Phillips company is one of the largest refiners of aviation gasolines selling its products to some of the large air transportation systems.

"Pilots and aircraft owners frequently suffer by different state tax policies," Mr. Phillips said in his wire to the governors. "A survey shows majority sacrifice rebate privileges because of costly delay and red tape in obtaining refunds. Others constantly make open protest in states which do not offer refunds but instead use the tax to swell highway fund and other nonaeronautical activities. Speaking for large group of pilots and aircraft owners suggest states consider uniform tax policy to exempt aviation from gasoline tax which works hardship on pioneering industry or apply revenue exclusively toward airway or airport developments which would materially aid all aviation."

Mr. Phillips supplemented his wire with an additional statement in which he reviewed the gasoline tax situation as it applies to aviation gasoline.

"Sixteen states collect a tax on aviation gasoline and do not provide for any refund," he said. "The tax is applied to highways and other nonaeronautical activities. Twenty-three of the states provide for a rebate of the tax. The remaining nine states refund the tax only in instances of commercial use. Even the states which collect and rebate the tax have different policies. Certain of these states allow for evaporation and shrinkage; a few for use in interstate commerce; others if purchased in 25-gallon quantities or over and numerous other fixed limitations."

The method of securing the rebate is so complicated and troublesome in practically every state which offers a rebate that few find it possible to take advantage of it, Mr. Phillips said, and added that pilots and others who fly interstate almost need the services of a secretary to keep them informed on state gas policies; present claims for rebate and conduct correspondence with the various state refunding authorities.

He pointed out that they lose not only time in such a procedure but also the use of their money. The incidental expense of collection of the rebate often proves more expensive than the rebate they would receive. Whether consciously or not, the states which offer the rebate privilege are able to retain most of the tax because of the time and trouble on the part of pilots and operators in getting their money back.

Mr. Phillips challenged the airmindedness of states who swell the highway and other nonaeronautical funds with revenue from aviation gasoline taxation. "We have found in our numerous surveys that the aeronautical industry, pioneering its way without the governmental subsidies that are so popular abroad, is having a hard enough time financing its own development without building highways. It would be just as reasonable to tax automobiles to encourage the sewing machine industry. Aircraft must be exempted from gasoline taxation or that revenue must be used exclusively to aid aviation.

"Last year airplanes consumed approximately 40,000,000 gallons of gasoline and the 1930 consumption will easily double the 1929 total. Even an extremely modest tax on this consumption would create a fund that would be of decided benefit to the aeronautical industry."

RESUME OPERATIONS AT MUSKEGON, MICH. PLANT

MUSKEGON, Mich., Mar., 22.—Steady operations have been resumed at the Old Dutch Refining Company plant east of the city limits after erection of two new shell stills and other improvements during the last two months, it was announced today by John Borden, new president of the company.

During the construction of the new units the plant was operated intermittently running principally gasoline, kerosene and distillates until this week.

Test operations of the new shell stills through which some of the product of the plant will be rerun for production of special naphthas were started this week and several carloads of naphtha have been shipped. Laboratory tests both at the Muskegon plant and at the Chicago office have proved successful, according to Mr. Borden, and it is hoped that the company will be able to proceed with the production of naphthas, the original purpose of its erection here.

The two new shell stills have a combined capacity of 1,000 bbls. a day. The company is now running about 2,000 bbls. of crude oil daily through the Simrall Pipe Line Corp. and the Old Dutch Construction Co. gathering systems in the Muskegon oil field.

Mr. Borden recently succeeded Walter E. Anderson as president of the Old Dutch Refining Co. He announced today that F. H. Duggan, of Chicago, and N. Buining, of the Muskegon plant, have been named secretary and treasurer respectively, of the company. Mr. Borden previously filled both positions.

Ernest L. Hughes, of the Hughes Oil Co. of Chicago, will continue as vice president of the company and will be general manager of the Muskegon plant. E. G. Guy continues as plant superintendent and the rest of the oganization will be unchanged.

STANDARD WILL LICENSE HYDROGENATION PROCESS

NEW YORK, Mar. 25.—The Standard Oil Co. of New Jersey is offering its hydrogenation process to all companies in the oil industry that can commercially use it, it was learned at the Jersey company's offices here today. A company is being organized to take over the United States rights to the process from the Standard I. G. Co., owned jointly by Standard Oil Co. of New Jersey and the German I. G. Co. United States companies desiring to utilize the hydrogenation process will be required to subscribe to stock in the new company and pay a nominal royalty, the new company in turn paying a royalty to the Standard I. G. Co. for the United States rights to the process.

The New Jersey company is installing a hydrogenation plant at its Bayway refinery and expects to have the process in operation by May 1, this year. The Bayway plant will be the first commercial hydrogenation plant in the United States. A similar plant will be completed by a subsidiary, the Standard Oil Co. of Louisiana, at its Baton Rouge, La., refinery by the close of the year, and a third hydrogenation plant located at the Humble Oil & Refining Co.'s Baytown, Tex., refinery will probably go into operation during the first part of 1931.

FRED JENSEN RESIGNS

CHICAGO, Mar., 22.—Fred Jensen, who has been in charge of tank car lub sales at the Chicago office for the Swan-Finch Oil Corp., has resigned. He expects to continue in the sale of lubricating oils and greases.

STANDARD TO MARKET IN ROCKY MOUNTAIN STATES

DENVER, Colo., Mar. 24.—The Midwest Refining Co., which entered the retail marketing business in the Rocky Mountain area in 1927, will retire from that field in the near future and the Standard Oil Co. of Indiana will take over the business. The company operates approximately 250 wholesale and retail stations in Colorado, Wyoming and Montana. The Midwest will continue as a producing and refining organization as in the past. The Standard of Indiana company will take over the Midwest sales organization and employes in this territory will not be affected.

Indications of this change have been apparent for some time. When the Midwest first entered the retail marketing business it operated through three subsidiaries in Colorado, Wyoming and Montana and put out its products under its own brands. These subsidiaries were taken over by the Midwest and a few months ago the Standard Oil Co. of Indiana brand names were adopted. Since the Midwest is owned by the Standard, no change in ownership takes place. The expansion of the retail marketing business in this territory will continue.

This action for the first time will place a company bearing the Standard name in the Rocky Mountain marketing area. For many years the Continental Oil Co. was the marketing representative in the several states which constitute the Rocky Mountain section. After the Standard dissolution in 1911 the Continental company contineud as the major marketing company, buying the bulk of its supplies from the Midwest Refining Co., which became a subsidiary of the Standard Oil Co. of Indiana. During the past two or three years the contract agreements between the Continental and Standard companies has been dropped, the Continental company developing its own refineries and operating independently of the Standard.

Under the new arrangement the Standard of Indiana will offer a complete line of its products to Rocky Mountain consumers. Most of these products will be refined at the Casper, Wyo., refinery of the Midwest Refining Co.

RE-ELECT RAGLE PRESIDENT

DETROIT, Mich., Mar. 20.—H. H. Ragle was re-elected president of the Michigan Oil Men's Association at the annual meeting which closed here today. Mr. Ragle has been president of the association for several years and during the past year has devoted his entire time to association work. The following were elected vice presidents of the association: A. D. Dubuisson of South Haven; A. J. Boegert of Saginaw; C. E. Rennie of Traverse City; Peter Jensen of Escabana, and J. F. Wilson of Port Huron.

The three-day convention was largely attended. Several prepared addresses were given on subjects of general interest to the jobbing trade.

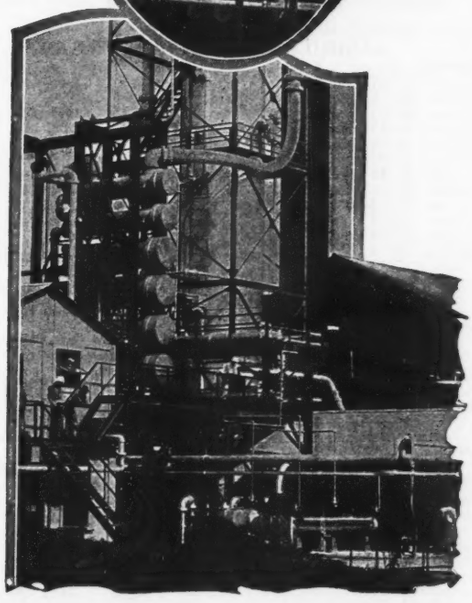
COMPLETE NEGOTIATIONS FOR REFINERY IN JAPAN

LOS ANGELES, Calif., Mar. 22.—The Associated Oil Co. has joined with the Mitsubishi interests of Japan for the purpose of manufacturing and marketing petroleum products in Japan, according to a statement issued from the office of William F. Humphrey, president of the Associated Oil Co.

The Mitsubishi Oil Co., Ltd., is being organized for the purpose of carrying on these operations. The new company, with headquarters in Tokyo, will be capitalized for 5,000,000 yen divided into 100,000 shares of capital stock of the par value of 50 yen each, which will be owned by Associated Oil Co. and the Mitsubishi interests jointly.

Under the supervision of Associated engineers, Mitsubishi Oil Co. will start construction of a modern refinery in the near future. Land has already been acquired for this purpose, located on Tokyo Bay between Tokyo and Yokohama. According to plans now being prepared by Associated, the plant will be a complete, modern refining unit, with a capacity of 4,000 bbls. of crude per day and a cracking capacity of 1,500 bbls. daily. The refinery will be equipped to manufacture gasoline, distillates, lubricating oil, fuel oil, and other petroleum products which will be marketed in the empire of Japan and Korea, Formosa and other portions of the orient. The crude oil requirements of the refinery will be furnished

(Continued on Page 150)



G-R Condensers and Heat Exchangers Selected Throughout

IN tropical Trinidad, far from sources of supply, equipment *must* be dependable.

When the apparatus for the Trinidad Leaseholds Ltd. refinery was selected, Griscom-Russell Condensers and Heat Exchangers were specified throughout. The records of the many thousands of G-R installations had so definitely established their reliability, economy and efficiency of operation that the company's engineers knew they were safe in standardizing on G-R Heat Transfer Apparatus.

Here, as in refineries and natural gasoline plants all over the world, G-R equipment is meeting every requirement and winning the hearty approval of plant engineers, superintendents and operating men.

The Griscom-Russell Co.
285 Madison Ave., New York
Branches in Principal Oil Centers

Griscom-Russell

Heat Transfer Apparatus

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Mar. 25		Mar. 18		Mar. 11	
50-52 450 endpoint	.06¼	.06½	.06¼		.06¼	
56-58 450 endpoint	.06	.06¼	.05¾	.06	.05¾	.06
*58-60 437 endpoint (U. S. Motor)	.065		.067		.065	
*60-62 437 endpoint	†.06½	.06⅝	.06¼	.06½	.065	
*60-62 400 endpoint	.0675		.0675		.0675	
*64-66 375 endpoint	†.07¼	.07½	.0775		†.07¼	.07½
68-70 360 endpoint	.07⅝	.07¾	.07½	.07¾	.07½	.07¾
64-66 437 endpoint (blend)	.06	.06¼	.06	.06¼	.05¾	.06¼

*Weighted average prices March 24, 17 and 10, as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

NORTH TEXAS—						
56-58 450 endpoint	.06	.06¼	.05¾	.06	.05¾	.06
58-60 450 endpoint	.06	.06⅛	.05¾		.05½	.05¾
58-60 437 endpoint (U. S. Motor)	.06¼	.06⅜	.05⅞	.06⅛	.05⅝	.06⅛
60-62 400 endpoint	.06½	.06⅝	.06⅛	.06¼	.06	.06¼
64-66 390 endpoint	.06¾	.07	.06⅝	.06¾	.06½	
64-66 375 endpoint	.07¼	.07¾	.07	.07¼	.07	.07¼
68-70 360 endpoint	.07⅝	.07¾	.07½	.07¾	.07½	.07¾
64-66 437 endpoint (blend)	.06	.06¼	.05¾	.06	.05¾	.06
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.06¾	.07	.06¾		.06¾	
*ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.06¾		.06½	.06¾	.06¾	
PENNSYLVANIA—						
52-54 Naphtha	.07¼		.07¼		.07¼	
54-56 Naphtha	.07¼	.07½	.07¼	.07½	.07¼	.07½
58-60 Gasoline	.07½	.07¾	.07½	.07¾	.07½	.07¾
60 Gasoline	.07¾	.08¼	.07¾	.08¼	.07¾	.08¼
62 Gasoline	.07¾	.08⅜	.07¾	.08½	.07¾	.08¾
64 Gasoline	.08	.09¼	.08	.09	.08	.09
68-70 350 endpoint gasoline	.08¾		.08¾		.08¾	
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09	.10	.09	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06¼	.06½	.06¼	.06⅜	.06¼	
56-58 450 endpoint	.06	.06¼	.05⅞	.06	.05¾	.06
58-60 437 endpoint (U. S. Motor)	.06⅛	.06½	.06	.06½	.05⅞	.06½
60-62 400 endpoint	.06⅜	.06⅝	.06¼	.06½	.06	.06¼
64-66 375 endpoint	.07	.07¼	.07	.07¼	.07	.07¼
68-70 360 endpoint	.07½	.07¾	.07½	.07¾	.07½	.07¾
64-66 437 endpoint (blend)	.06¼	.06½	.06¼	.06½	.06¼	.06½
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08		.08		.08	
60-62 400 endpoint	.09		.09		.09	
61-63 390 endpoint	.09¼		.09¼		.09¼	
64-66 375 endpoint	.09		.09		.09	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Mar. 25		Mar. 18		Mar. 11	
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾		.05⅝	.05¾	.05½	.05⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05⅝		.05½		.05⅜	.05½
Grade B, 76-83.9, 375 e.p., rec. 85%	.05		.04⅝		.04½	.04⅝
Grade BB, 84-92, 375 e.p., rec. 85%	.04¾		.04½		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04⅝	.04¾	.04½		.04⅜	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾		.05⅝	.05¾	.05½	.05⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05⅝		.05½		.05⅜	.05½
Grade B, 76-83.9, 375 e.p., rec. 85%	.05		.04⅝		.04½	
Grade BB, 84-92, 375 e. p., rec. 85%	.04¾		.04½		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04⅝	.04¾	.04½		.04⅜	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.05¾	.06	.05⅝	.05¾	.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¾	.04⅞	.04⅝	.04¾	.04¾	.05
Grade C, 80-92, 375 e.p., rec. 78%	.04⅝	.04¾	.04⅝		.04¾	
CALIFORNIA—						
75-78 375-390 endpoint	.07¾	.08¼	.07¾	.08¼	.07¾	.08¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05⅜		.05⅝	.05¾	.05⅝	.05¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05⅝		.05½		.05½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¾		.04⅝		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¾		.04½		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04⅝		.04½		.04⅜	

BURNING OIL

OKLAHOMA (Group 3)—	Mar. 25		Mar. 18		Mar. 11	
41-43 water white kerosene	.04¼	.04½	.04⅛	.04⅜	.04	.04¼
42-44 water white kerosene	.04⅝	.05	.04½	.04¾	.04¼	.04½
NORTH TEXAS—						
41-43 water white kerosene	.04⅛	.04¼	.04	.04¼	.03¾	.04⅛
40-42 water white kerosene	.04	.04⅛	.04		.04	
*NORTH LOUISIANA—						
41-43 water white kerosene	.04¾	.05	.04¾	.05	.05	.05⅛
*ARKANSAS—						
41-43 water white kerosene	.04¾	.05	.04¾	.05	.05	.05⅛
PENNSYLVANIA—						
43 Kerosene prime white	.05¾		.05¾		.05¾	
45 Kerosene water white	.05⅞	.06	.05¾	.06	.06	
46 Kerosene water white	.06¼		.06¼		.06¼	.06½
47 Kerosene water white	.06½	.06¾	.06½		.06½	.06¾
300 Mineral Seal	.07¼		.07¼		.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04½	.05	.04½	.05	.04½	.05
Engine distillate, 43-44, 445 endpoint	.06½	.07	.06½	.07	.06½	.07
Engine distillate, 42-44 480 endpoint	.06	.06½	.06	.06½	.06	.06½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.04⅛	.04⅜	.04⅛	.04⅜	.04⅛	.04⅜
42-44 water white kerosene	.04¼	.04¾	.04½	.04¾	.04¼	.04¾
GULF COAST (Export)—						
41-43 prime white	.06		.06		.06	
41-43 water white	.07		.07		.07	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Mar. 25		Mar. 18		Mar. 11	
Below 18 Fuel Oil, per bbl.	.67½	.72½	.67½	.72½	.67½	.72½
18-22 Fuel Oil, per bbl.	.70	.75	.70	.75	.70	.75
20-22 Fuel Oil, per bbl.	.72½	.75	.72½	.77½	.72½	.77½
22-26 Fuel Oil, per bbl.	.77½	.82½	.80	.85	.75	.80
24-26 Fuel Oil, per bbl.	.82½	.87½	.82½	.87½	.80	.85
26-30 Fuel Oil, per bbl.	.85	.90	.85	.90	.82½	.87½
28-30 Fuel Oil, per bbl. (industrial)	.95	1.05	.95	1.05	.97½	1.05
32-36 Gas Oil (industrial)	.02½	.02⅝	.02½		.02½	
32-36 Gas Oil (straw color)	.02¾	.03	.02⅝	.02⅞	.02⅝	.02⅞
36-38 Distillate	.03		.03		.03	
38-40 Straw Distillate	.03⅛	.03¼	.03	.03¼	.03	.03¼
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.57½	.62½	.57½	.62½	.57½	.62½
24-26 Fuel Oil, per bbl.	.77½	.80	.77½	.80	.77½	.80
32-36 Gas Oil (straw)	.02⅝	.02½	.02⅝	.02½	.02⅝	.02½
38-40 Straw Distillate	.03		.03		.03	
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.85		.85		.85	
30-32 Gas Oil	.03	.03⅛	.03	.03⅛	.03	.03⅛
*ARKANSAS—						
33-36 Distillate	.03	.03¼	.03	.03¼	.03	.03¼
30-32 Gas Oil	.03	.03⅛	.03	.03⅛	.02⅞	.03⅛
16-22 Refinery Fuel Oil, per bbl.	.80	.90	.85	.90	.85	.90
GULF COAST (South Texas)—						
Gas Oil	.03¾	.04	.03¾	.04	.03¾	.04
Bunker C Fuel (cargo lots), per bbl.	.65	.70	.65	.70	.65	.70
Bunker C Fuel (small lots)	.95	1.00	.95	1.00	.95	1.00
PENNSYLVANIA—						
30-34 Fuel Oil	.04½		.04½		.04¾	
36-40 Fuel Oil	.04½	.04¾	.04½	.04¾	.04¾	.05
CALIFORNIA—						
33-36 Distillate	.03	.03½	.03	.03½	.03	.03½
26-32 Distillate	.02	.02½	.02	.02½	.02	.02½
15-20 Fuel Oil, Bunker (at tidewater)	.70	.80	.70	.80	.70	.80
15-20 Fuel Oil (cargo lots), per bbl.	.60	.75	.60	.75	.60	.75
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.90	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.75	.80	.77½	.82½	.80	.85
18-22 Fuel Oil, per bbl.	.65	.70	.67½	.72½	.70	.75
28-30 Fuel Oil, per bbl.	.90	.95	1.00	1.05	1.05	1.10
32-36 Gas Oil (zero)	.02¾	.02⅞	.02¾	.03	.02⅞	.03
32-36 Gas Oil (industrial)	.02¾	.02½	.02¾	.02½	.02¾	
36-38 Distillate	.02⅝	.02¾	.02⅞	.03	.03	.03⅛
38-40 Straw Distillate	.03	.03⅛	.03	.03⅛	.03⅛	.03¼

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Mar. 25		Mar. 18		Mar. 11	
100 vis., 2 color, 20-25 cold test	.06	.07	.06	.07	.06	.07
100 vis., 3 color, 20-25 cold test	.05½	.06	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.08	.08½	.08	.08½	.08	.08½
150 vis., 4 color, 20-25 cold test	.07¾	.08	.07¾	.08	.07¾	.08
180 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 4 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 5 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
200 vis., 3 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 4 color, 23-28 cold test	.11	.11¼	.11	.11¼	.11	.11¼
200 vis., 5 color, 23-28 cold test	.10¼	.10½	.10¼	.10½	.10½	.10½
240 vis., 3 color, 25-30 cold test	.14¼	.14½	.14¼	.14½	.14¼	.14½
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¾	.13	.12¾	.13	.12¾	.13
280 vis., 3 color, 25-30 cold test	.16¾	.17	.16¾	.17	.16¾	.17
280 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15¼	.16
280 vis., 5 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
Cylinder Stocks:						
600, steam refined, light green	.09	.11	.09	.11	.09	.11
600 steam refined, dark green	.08	.10	.08	.10	.08	.10
190-200 vis., D color Bright Stock	.41	.42	.41	.42	.41	.42
150-160 vis., D color Bright Stock	.37		.37		.37	
150-160 vis., E color Bright Stock	.32	.35	.32	.35	.32	.35
Waxes:						
124-126 White Crude Scale Wax	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
PENNSYLVANIA—						
34 Neutral	.07¼	.07¾	.07	.07¾	.07½	.07¾
34 Sundebloom	.07¾		.07¾		.07¾	
36 Minerals' Neutral	.07½		.07½		.07½	
150, 3 color	.15½	.17	.15½	.17	.16	.16½
180, 3 color	.21	.22	.21	.22	.21½	.22
200, 3 color	.25	.26	.25	.26	.25½	.26
220, 3 color	.29	.30	.28½	.30	.28½	.30
600, steam refined	.24		.24		.24	.24½
635, steam refined	.27	.29½	.27½	.29½	.27½	.29½
650, steam refined	.30		.30	.30½	.30	.31
600, Pennsylvania Flash	.32	.33	.32	.33	.32	.33
630, Pennsylvania Flash	.35		.35		.35	.37
600, E filtered	.28½	.30	.28½	.30	.29	.30
600, D filtered	.35		.35		.35	
Pennsylvania Bright Stocks	.40	.41	.40	.41	.40	.41
*122-124 White Crude Scale Wax	.02¾		.02¾	.03	.03	
124-126 White Crude Scale Wax	.02⅞		.03⅛		.03⅛	

*At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
No. 3 color, 200 vis., pale oil	.09¼	.09½	.09¼	.09½	.09¼	.09½
No. 3 color, 300 vis., pale oil	.10¾		.10¾		.10¾	
No. 3½ color, 500 vis., pale oil	.11½	.12	.11½	.12	.11½	.12
No. 4 color, 750 vis., pale oil	.13¼	.13½	.13¼	.13½	.13¼	.13½
No. 5 color, 1200 vis., pale oil	.16		.16		.16	
No. 5 to 6 color, 1200 vis., pale oil	.15		.15		.15	
No. 5 to 6 color, 200 vis., red oil	.08½	.08¾	.08½	.08¾	.08½	.08¾
No. 5 to 6 color, 300 vis., red oil	.09½	.10	.09½	.10	.09½	.10
No. 5 to 6 color, 500 vis., red oil	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
No. 5 to 6 color, 750 vis., red oil	.12¾		.12¾		.12¾	
No. 2½ color, 200 vis., pale filtered	.11	.12	.11	.12	.11	.12

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

No. 2½ color, 300 vis., pale filtered	.12	.13	.12	.13	.12	.13
No. 2½ color, 500 vis., pale filtered	.14½	.15	.14½	.15	.14½	.15
No. 2½-3 color, 750 vis., pale filtered	.17	.19	.17	.19	.17	.19
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.14¼	.15½	.14¼	.15½	.14¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Mar. 25		Mar. 18		Mar.11	
Gasoline, U. S. Motor, 58-60, 437	.08½		.08¼	.08½	.08¼	.08½
Kerosene, water white, 41-43	.07¾		.07¾		.07¾	
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05		1.05		1.05	
Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil	.10½		.10½		.10½	
28 pale Paraffin Oil	.07¼		.07¼		.07¼	
28S red Paraffin Oil	.12½		.12½		.12½	
25O red Paraffin Oil	.11½		.11½		.11½	
22S red Paraffin Oil	.10		.10		.10	
20O red Paraffin Oil	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.03⅝		.03⅝		.03⅝	
125-127 a.m.p., per lb.	.04		.04		.03¾	
130-132 a.m.p., per lb.	.04½		.04½		.04⅝	
133-135 a.m.p., per lb.	.05½		.05½		.05½	
135-137 a.m.p., per lb.	.05⅝		.05⅝		.05¾	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01⅞		.01⅞		.01⅞	
Amber	.03⅜		.03⅜		.03⅜	
Extra Amber	.03½		.03½		.03½	
Cream	.06⅜		.06⅜		.06⅜	
Lily White	.06½		.06½		.06½	
Snow White	.08⅜		.08⅜		.08⅜	

*Lighterage 5.0 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Mar. 25		Mar. 18		Mar.11	
Kerosene, prime white	.07¾		.07¾		.07¾	
Kerosene, water white	.09		.09		.09	
600, steam refined cylinder stocks, in bbls.	.31		.31		.30	.31
635, steam refined	.33		.33		.32	.33
650, steam refined	.37		.37		.36	.37
600, Pennsylvania Flash	.39		.39		.40	
630, Pennsylvania Flash	.42		.42		.43	
600, Warren E	.38½		.38½		.39½	
600, Oil City E	.37½		.37½		.38½	
Light 140-150 Bright Stocks	.48		.48		.48½	.49
Dark 140-150 Bright Stocks	.47		.47		.47½	.48

LOS ANGELES EXPORT PRICES

	Mar. 25		Mar. 18		Mar.11	
Kerosene, water white	.04	.04½	.04	.04½	.04	.04½
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾

*Prices on coastwise shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posts all oil 40 gravity and above at $1.33 on February 15, 1930.

Corsicana heavy (Jan. 16, 1930)*.....$ .70

Other fields.....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan*.....Same as North Texas

Crane-Upton-Crockett, Pecos, Winkler and Mitchell.....See gravity table, Column 3

Howard and Glasscock .....See gravity table, Column 11

Chalk† .....$ .65

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (May 20, 1929) .....$ .85

Smackover, 24 gravity and above (May 20, 1929) 1.00

Cotton Valley, below 36 gravity (Jan. 17, 1930) ..... .80

Bellevue (Jan. 17, 1930) 1.05

Urania (Jan. 16, 1930) ..... .85

East El Dorado (May 22, 1929) ..... .85

Other fields.....See gravity table

Cotton Valley crude about 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Magnolia Petroleum Co.

GULF COAST

Grade A (Jan. 15, 1930)* $1.05

Grade B.....See gravity table

Jennings, La. (Jan. 15, 1930)† 1.00

Refugio (Jan. 20, 1930)¶ ..... .55

Sorrento (Jan. 15, 1930)‡ 1.00

Markham (Jan. 15, 1930)‖ ..... .75

High Island (Jan. 15, 1930)¶ ..... .85

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Pipe Line Co. ¶Posted by Gulf Coast Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective Feb. 15, 1930)

Rock Creek, Wyo. $1.25

Salt Creek.....See gravity table

Big Muddy 1.33

Grass Creek, heavy (July 27, 1928)... .90

Grass Creek, light 1.45

Mule Creek (May 21, 1929) 1.20

Elk Basin 1.45

Lance Creek 1.53

Poison Spider (March 14, 1927) 1.00

Notches (March 14, 1927) ..... .65

Rex Lake (February 22) 1.10

Osage (May 21, 1929) 1.65

Lost Soldier (contract, May 22) 1.05

Hamilton Dome (March 14, 1927) ..... .85

Pedro (May 21, 1929) 1.25

Greybull (May 21, 1929) 1.65

Four Bear (May 21, 1929) ..... .85

Cat Creek (Montana) (Feb. 15, 1930).. 1.45

Sunburst (Montana) (Feb. 15, 1930)... 1.65

Torchlight (May 21, 1929) 1.65

Hogback (New Mexico) (May 21, 1929) 1.70

Artesia (New Mexico) (Feb. 15, 1930).. 1.00

Note—Salt Creek, Osage, Cat Creek, Grey-

(Continued on Page 142)

CRUDE OIL GRAVITY TABLE

Gravity—	Okla., Kans. N. C. Texas 1	No. La. and Arkansas 2	Crane, Upton, Crockett, Winkler, Pecos, Mitchell, (West Texas) Lea, N. Mex. 3	Stephens, Ark. 4	Wheeler (Texas Panhandle) 5	Gray County (Texas Panhandle) 6	Carson and Hutchinson (Texas Panhandle) 7	Salt Creek, Wyo. 8	Grade B and Light Crude (G. Coast) 9	Somerset (South Central Texas) 10	Howard and Glasscock, W. Tex. 11
24 and above.	....	....	....	....	....	....	....	....	....	....	....
Below 24	....	....	....	....	....	....	....	....	....	....	....
Below 25	.60	....	.55	....	....	....	....	....	.90	....	.55
25 to 25.9	.66	....	.58	....	....	....	....	....	.93	....	.59
26 to 26.9	.72	....	.61	....	....	....	....	....	.96	....	.61
27 to 27.9	.78	....	.64	....	....	....	....	....	.99	....	.64
Below 28	....	.78	....	.90	.70	.69	.72	....	....	....	....
28 to 28.9	.84	.84	.67	.94	.70	.69	.72	....	1.02	....	.66
29 to 29.9	.90	.90	.70	.98	.70	.75	.72	.90	1.05	....	.69
30 to 30.9	.96	.96	.73	1.02	.76	.81	.72	.96	1.08	....	.70
31 to 31.9	1.02	1.02	.76	1.06	.82	.87	.72	1.02	1.11	....	.72
32 to 32.9	1.08	1.08	.79	1.10	.88	.93	.78	1.08	1.14	1.05	.74
33 to 33.9	1.11	1.11	.82	....	.91	.96	.81	1.11	1.17	1.07	.76
34 to 34.9	1.14	1.14	.85	....	.94	.99	.84	1.14	1.20	1.09	.78
35 to 35.9	1.17	1.17	.88	....	.97	1.02	.87	1.17	1.23	1.11	.80
36 to 36.9	1.20	1.20	.91	....	1.00	1.05	.90	1.20	....	1.13	.82
37 to 37.9	1.23	1.23	....	....	1.03	1.08	.93	1.23	....	1.15	....
38 to 38.9	1.26	1.26	....	....	1.06	1.11	.96	....	....	1.17	....
39 to 39.9	1.29	1.29	....	....	1.09	1.14	.99	....	....	....	....
40 to 40.9	1.32	1.32	....	....	1.12	1.17	1.02	....	....	....	....
41 to 41.9	1.35	1.35	....	....	1.15	1.20	1.05	....	....	....	....
42 to 42.9	1.38	1.38	....	....	1.18	1.23	1.08	....	....	....	....
43 to 43.9	1.41	1.41	....	....	1.21	1.26	1.11	....	....	....	....
44 and above.	1.44	1.44	....	....	1.24	1.29	1.14	....	....	....	....

Column 1, Note—Above prices posted by Prairie Oil & Gas Co. on February 15, 1930; by Sinclair Oil & Gas Co. February 13, 1930. On January 15, 1930, Humble Oil & Refining Co. posted North Central Texas crude at following prices: Below 25 gravity 60 cents; a 6-cent differential added per degree to 32-32.9 gravity at $1.08 and a 3-cent differential above making 44 gravity and above at $1.44. The Carter Oil Co. posted this schedule for Oklahoma and Kansas, January 16. Same date Magnolia posted these prices in North Central Texas. On January 17, Magnolia posted the schedule for Oklahoma and Kansas.

North Central Texas—Includes Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona and Moran Pools.

Column 2—Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, Cotton Valley above 36 gravity, DeSoto, Haynesville, Homer and El Dorado only). Texas Pipe Line Co., January 15, 1930. Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., January 16, 1930.

Column 3—Humble Oil & Refining Co., January 15, 1930, and Magnolia Petroleum Co. January 16, 1930.

Column 4—Atlantic Oil Producing Co. and Louisiana Oil Refining Corp., May 21, 1929.

Columns 5, 6 and 7—Humble Oil & Refining Co., January 15, 1930, and Magnolia Petroleum Co., January 16, 1930. Adopted by Prairie Oil & Gas Co., February 15.

Column 8—Midwest Refining Co., February 15, 1930. All crude over 37 gravity $1.23 per barrel.

Column 9—Humble Oil & Refining Co., January 15, 1930 (schedule ends 35 and above).

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

Column 11—Humble Oil & Refining Co., January 15, 1930, Magnolia posted Howard-Glasscock crude same schedule as West Texas, January 16, 1930.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective March 11, 1930)

Gravity—	Seal Beach, Salt Lake, Newport, Summerland, Lawndale, Los Angeles Fullerton, Richfield, Torrance, Olinda-Brea, Hamilton Heights, Huntington Beach, Signal Hill, Inglewood 1	Whittier, La Habra, Coyote Hills 2	Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills 3	Montebello 4	Santa Fe Springs (Nov. 8) 5	Santa Maria, Coalinga 6	Wheeler Ridge, Fruitvale 7	Orcutt, Ventura, Rincon 8	Ventura Avenue (Nov. 8) 9	Elwood Terrace 10	Athena Rosecrans, Dominguez 11
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.85	.87	.78	.83	....	.78	.78	.78	.83	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1.07	....	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.14	....	1.09	1.11	1.07	1.07	1.07	1.10	1.07	..	1.14
25 to 25.9	1.21	....	1.16	1.17	1.13	1.12	1.12	1.18	1.14	....	1.19
26 to 26.9	1.28	....	1.23	1.23	1.19	1.17	1.17	1.26	1.21	..	1.24
27 to 27.9	1.35	....	1.30	1.29	1.25	1.23	1.22	....	1.28	....	1.29
28 to 28.9	1.42	....	1.35	1.35	1.31	1.27	....	....	1.35	....	1.34
29 to 29.9	1.46	....	1.41	1.38	1.37	1.31	....	....	1.39	....	1.39
30 to 30.9	1.50	....	1.47	1.41	1.43	1.35	....	....	1.43	....	1.45
31 to 31.9	1.55	....	1.53	....	1.49	1.39	....	....	1.48	....	1.51
32 to 32.9	1.60	....	1.59	....	1.55	1.43	....	....	1.53	....	1.57
33 to 33.9	1.65	....	1.65	....	1.60	1.47	....	....	1.59	....	1.64
34 to 34.9	1.70	....	....	....	1.65	1.51	....	....	1.65	1.32	1.71
35 to 35.9	1.75	....	....	....	1.70	1.55	....	....	1.71	1.39	1.78
36 to 36.9	1.80	....	....	....	1.75	....	....	....	....	1.46	1.84
37 to 37.9	1.85	....	....	....	1.80	....	....	....	....	1.53	1.90
38 to 38.9	1.90	....	....	....	1.85	....	....	....	....	1.60	1.96
39 to 39.9	....	....	....	....	1.90	....	....	....	....	1.66	2.02
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	2.08
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.14
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.20

KERN RIVER, NEWHALL-McKITTRICK, MOUNT POSO AND ROUND MOUNTAIN 11 to 13.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: .11 to 13.9 gravity at 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

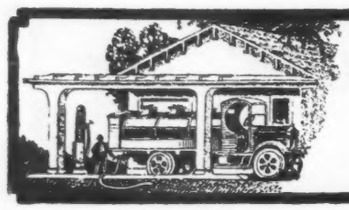
Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; lost hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Mar. 25

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago†	17 0	18.0	3.0	13.0
Decatur, Ill.	17.2	18.2	3.0	13.1
E. St. Louis	16.4	17.4	3 0	12.2
Joliet	17.4	18.4	3 0	13.3
Peoria	17.2	18.2	3.0	13.1
Quincy	17.2	18.2	3.0	12.9
Davenport, Ia.	17.5	18.5	3.0	13.3
Des Moines	17.5	18.5	3.0	13.3
Keokuk	17.5	18.5	3.0	13.3
Sioux City	17.1	18.1	3 0	12.9
Duluth, Minn.	18.5	19.5	3.0	13.9
Mankato	18.1	19.1	3.0	13.7
Minn'apolis	18.2	19.2	3.0	13.9
LaCrosse, Wis.	17.2	18.2	2.0	14.0
Milwaukee	16.1	17.1	2.0	12.9
Madison	16.3	17.3	2.0	13.1
Detroit, Mich.	17.8	18.8	3.0	14.7
Grand Rapids	17.7	18.7	3.0	14.6
Saginaw	17.9	18.9	3.0	14.8
Evansville, Ind.	18 0	19.0	4.0	14.0
Fort Wayne	18.4	19.4	4.0	14.4
Indianapolis	18.2	19.2	4.0	14.2
South Bend	18.4	19.4	4.0	14.4
Fargo, N. D.	19.9	20.9	3.0	15.9
Huron, S. D.	19.3	20.3	4.0	14.7
Sioux Falls	18.1	19.1	4.0	14.4
K. C., Mo.*	16.9	17.9	3.0	11.6
Springfield*	16.8	17.8	3.0	12.5
St. Louis*	15.9	16.9	2.5	12.3
St. Joseph	16.5	17.5	2.0	12.2
Wichita, Kans.	15.8	14.8	3.0	11.8
Bartlesville, Okla.	16.5	17.5	4.0	11.5

*State tax 2 cents; remainder city tax.
†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents; 100,000 gallons or more 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	12.9
V. M. & P. Naphtha	16.7	13.9
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	16 0	20 0	4.0	12.0
Fort Worth	16.0	19 0	4.0	12.0
Houston	15.0	19.0	4.0	11.0
San Antonio	15.0	19.0	4.0	11.0
El Paso	16.0	20.0	4.0	14 0
Texarkana	15.0	17.0	4.0	12.0
Muskogee*	14.0	16.0	4.0	10.0
Okla. City*	15.0	18.0	4.0	10.0
Tulsa*	15.0	19.0	4 0	10.0
Ft. Smith, Ark.	14.0	16.0	5.0	12.0
Little Rock	18.0	18.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	16.0	18.0	4.0	15.5
Pueblo	18.0	19.0	4.0	15.5
Grand Junction	22.0	25.0	4.0	19.0
Casper, Wyo.	18.0	21.0	4.0	14.0
Cheyenne	19.5	22.5	4.0	15.5
Butte, Mont.	23.5	26.5	5.0	20.0
Helena	23.5	26.5	5.0	20.0
Salt Lake, Utah	20.0	20.0	3.5	17.0
Albu'que, N. M.	20.0	22.0	5.0	17.0
Boise, Idaho	23.5	26.5	5.0	19.0
Twin Falls	23.5	26.5	5.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	15.0	•21.0	...	13.0
Philadelphia	15.0	•21.0	...	13.0
Scranton	15.0	•21.0	...	13.0
Allentown	15.0	•21.0	...	13.0
Altoona	15.0	•21.0	...	13 0
Erie	15.0	•19.0	...	13.0
Dover, Del.	18.0	20.0	3.0	13.0
Wilmington	18.0	20.0	3.0	13.0
Springf'd, Mass.	15.5	17.5	2.0	12.5
Worcester	15.3	17.3	2.0	12.3
Boston	14.5	16.5	2.0	11.2
Providence, R.I.	14.7	16.7	2.0	11.7
Hartford, Conn.	15.5	17.5	2.0	12.5
New Haven	15.6	17.6	2.0	12.6

•Includes tax of 4.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	15.6	17 6	2 0	14 6
New York*	14.3	16.3	2.0	13.3
Buffalo	15.8	17.8	2.0	13.8
Rochester	16.0	18.0	2.0	13.0
Syracuse	16.8	18.8	2.0	13.8
Boston, Mass.	14.5	16.5	2.0	12.5
Augusta, Me.	17.8	19.8	4.0	13.8
Manch't'r, N. H.	17.4	19.4	4.0	13.4
Burlington, Vt.	17.6	19 6	4 0	14.3

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	20.0	21.0	4.0	15.5
Augusta	21.0	23.0	4.0	15.5
Macon	21.0	23.0	4.0	14.0
Savannah	20.0	22 0	4.0	14.0
Birm'ham, Ala.	20.0	22.0	5.0	14.5
Mobile	17.0	17.0	4.0	13.5
Montgomery	20.0	22.0	4.0	15.0
Clarks'le, Miss.	18.0	20.0	5.0	12.5
Jackson	19 0	21.0	5.0	13.0
Natchez	18.5	20.5	5.0	13.0
Gulfport	20.5	22.5	5.0	13.0
Vicksburg	18.5	20.5	5.0	13.0
Jack'ville, Fla.	20.0	22.0	6.0	14.0
Miami	21.0	23.0	6.0	14.0
Pensacola	18.0	20.0	6.0	13.5
Tampa	20.0	22.0	5.0	13.0
Lexington, Ky.	18.0	20.0	5.0	14.5
Covington	19.0	20.0	5.0	14.5
Louisville	19.0	21.0	5.0	13.0
Ashland	20.0	21 0	5.0	15.0
Catlettsburg	20.0	21.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola, Birmingham and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City	16.5	18.5	2.0	13.5
Newark, N. J.	15.5	17.5	2.0	12.5
Annapolis, Md.	18 0	20.0	4.0	13.0
Baltimore	17.2	19.2	4.0	10.5
Cumberland	19.0	21.0	4.0	14.0
Washington	15.7	17.7	2.0	12.7
Danville, Va.	19.8	21.8	5.0	13.8
Norfolk	18.3	20 3	5.0	11.0
Petersburg	19.3	21.3	5.0	13.3
Roanoke	20.0	22.0	5.0	14.0
Richmond	18 7	20.7	5.0	12.7
Charles'n, W.Va.	18.5	20.5	4.0	12.5
Keyser	19.1	21 1	4.0	14.1
Parkersburg	17.2	19.2	4.0	11.2
Wheeling	18.4	20.4	4.0	12.4
Charlotte, N. C.	20.3	22.0	5.0	14.3
Hickory	20.8	22.8	5.0	14.8
Mt. Airy	20.5	22 5	5.0	14.5
Salisbury	20.7	20.7	5.0	14.7
Charleston, S.C.	19.3	21.3	6.0	12.3
Columbia	21.2	23.2	6.0	14.2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco	20.0	23.0	3.0	15.5
Los Angeles	19.5	22.5	3.0	15.5
Reno, Nev.	25.0	28.0	4.0	19.0
Portland, Ore.	19.5	22.5	4.0	16.5
Seattle, Wash.	18.5	21 5	3.0	16.5
Tacoma	20.5	23 5	3.0	16.5
Spokane	22.5	25.5	3.0	20.5
Phoenix, Ariz.	18.0	22.0	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where discount is 1 cent.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	18.25	20.25	4.0	13.25
McCook	19.75	21.75	4.0	14.75
Norfolk	18.75	20.75	4.0	13.75
N. Platte	19.75	21.75	4.0	14.50
Scottsbluff	19.75	21.75	4.0	14.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	18.0	19.0	4.0	†12.0

*Dealers and commercial accounts 2 cents under tank wagon.
†Service station price 14 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	15.0	15.0	5.0	12.0
Baton Rouge	15.0	15.0	4.0	14.0
Alexandria	16.0	18.0	5.0	14.0
Lafayette†	17.0	19.0	5.0	14.0
Lake Charles†	16.0	18.0	5.0	14.0
Shreveport	15.0	17.0	4.0	14.0
Knoxv'le, Tenn.	19.0	20 0	5 0	16.0
Memphis	17.0	19.0	5.0	12.5
Chattanooga	19.0	20.0	5.0	16.0
Nashville	18.0	20.0	5.0	16.0
Bristol	19.0	21.0	5.0	14.0
Lt. Rock, Ark.	16.0	18.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.
†Includes 1-cent parish tax.

TANK WAGON CHANGES

Magnolia Petroleum Co. reduced the gasoline station price 2 cents March 15 to 17 cents in Texarkana.

Standard Oil Co. of Louisiana reduced the gasoline station price 1 cent March 17 in Chattanooga, Tenn., and Knoxville, Tenn.

On March 20 the company advanced the gasoline station price 1 cent to 21 cents in Bristol, Tenn.

Standard Oil Co. of Kentucky reduced the gasoline station price 2 cents March 3 to 17 cents in Mobile, Ala.

Continental Oil Co. reduced the gasoline station price 3 cents to 20 cents March 15 in Salt Lake City, Utah.

FERGUSON HEADS DIVISION

Appointment of W. H. Ferguson, Continental Oil Co., Denver, Colo., as chairman of the Rocky Mountain Region Code Committee, has been announced by Henry B. Dawes, the Pure Oil Co., Chicago, chairman of the American Petroleum Institute's Division of Marketing. Mr. Ferguson succeeds F. C. Cramer, Denver Powerine Co., Denver, Colo., who has resigned as chairman but remains a member of the committee.

RICHFIELD EXTENDS OUTLETS

The Richfield Oil Co. of New York has purchased the station properties of Clifton F. Williams & Co., of Schenectady, N. Y. The properties include six service stations in that city and 70 dealer accounts in Schenectady County. The gallonage totals approximately 4,000,000 yearly. The stations will be served by a bulk storage which the Richfield company built along the New York State canal last year.

The Richfield Oil Co. of California has announced plans for extending its sales into Arizona from its California refineries. Distribution has already been started at Phoenix and Prescott.

AVIATION GASOLINE DISCOUNTS

CHICAGO, Mar., 22.—The Standard Oil Co. of Indiana has recognized the growing demand for aviation gasoline by naming quantity discounts as follows: on sales of 2,000 gallons in any one month a discount of one-half cent per gallon will be allowed from the tank wagon price. On sales of 6,000 gallons in any month the allowance will be increased to 1 cent.

CRUDE OIL PRICES

(Continued from Page 141)

bull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Jan. 15, 1930)*	$1.05
Luling (Jan. 16, 1930)*	.75
Mirando (Jan. 15, 1930)†	.75
Salt Flat (Jan. 15, 1930)§	1.05
Rockdale Minerva (April 15):	
Below 28 gravity	1.25
28-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	...
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. §Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective Feb. 17, 1930)

Penna Grade Oil in New York Transit Lines (New York)	$2.80
Bradford District Oil in National Transit Lines (Pennsylvania)	2.80
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.80
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia)	2.75
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.65
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.45
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (Feb. 17, 1930)	1.55
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (Feb. 17, 1930)	1.65
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (Feb. 17, 1930)	1.37
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.60
Wayne District Oil in Cumberland Pipe Lines (Feb. 17, 1930)	1.24

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective Feb. 15, 1930)

Lima	$1.65
Wooster	1.75
Illinois	1.60
Indiana	1.42
Princeton	1.60
Plymouth	1.18
Waterloo (Nov. 17, 1926)	1.35
Western Kentucky	1.50
Dundee, Mich. (Feb. 13, 1930)‖	..... Same as Mid-Continent gravity scale
Upper and Lower Traverse sands, Mich.‖	..... Same as Mid-Continent gravity scale
Midland, Mich. (Feb. 6, 1930)*	1.25
Saginaw, Mich., Saginaw sand (Feb. 10)†	1.89
Saginaw, Mich., Berea sand (Feb. 10)	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Mar. 15)‡	1.50
Oil in line in Stoll Oil Refinery Co. in Oil City, Ky. (Feb. 19, 1930)§	1.45
Oil Springs (Canada) (Feb. 15, 1930)¶	2.12
Petrolia (Canada) (Feb. 15, 1930)¶	2.15

*Posted by Pure Oil Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. ‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$ .67

*Based on February transactions.

The kind of *Service* that brings them back! . . . Sinclair Three-Gas Service

Sell Sinclair Three-Gas Service. Offer motorists three different fuels to select from. If they want the *Ace* of high test gasolines—one that gives quick starting, flashy pickup and brilliant performance—recommend Sinclair *Aircraft* Gasoline! Sinclair Aircraft is the Ace of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.

Or—if they want high compression performance that stops knocks—there's Sinclair *H-C* Gasoline. It's all gasoline, nothing added.

And—if they prefer to pay three cents less per gallon—there's Sinclair *Regular* Gasoline—full of eager power—*great* for *economy* and *mileage*. The quality gasoline at a popular price!

A motorist doesn't have to "take" just one gasoline when he drives in for Sinclair "Three-Gas" Service . . . He can choose it to fit his own engine and his own preference.

When a motorist gets Sinclair Three-Gas Service he gets the kind of service that brings him back and makes him a regular customer.

SINCLAIR REFINING COMPANY, INC.
45 Nassau Street, New York

Atlanta ***Chicago*** ***Houston*** ***Kansas City***

Thinks Van Pool May Exceed Mexia

President H. M. Dawes of Pure Oil Co. Comments Upon Prospects of East Central Texas Field. Oil Securities Market

In connection with the issue of $20,000,000 of 10-year 5½ per cent sinking fund gold notes, to mature March 1, 1940, the Pure Oil Co. states that consolidated net earnings for the nine months ended December 31, 1929, were $6,720,797 after depreciation and depletion but before interest and Federal taxes. For the fiscal year ended March 31, 1929, net on the same basis was $12,282,005, which compared with $4,704,164 in the preceding fiscal year and $12,353,612 in the fiscal period ended March 31, 1927.

"It is expected that the present depressed condition of the industry and the decline in crude oil values," the company states, "will be reflected in the earnings of the company for the first quarter of 1930, during which period no benefit will have been derived from the application of the proceeds of this issue. The operation which the company is undertaking should materially augment the company's capacity and further entrench its strong position."

In view of the report for the nine months and the smaller margin of profit for the first three months of the current calendar year, net income for the fiscal year ended March 31, 1930, will apparently show an appreciable reduction. In the preceding fiscal year net after all deductions, including interest and Federal taxes, amounted to $11,224,081, which was equivalent after preferred dividends to $3.05 a share on the 3,038,370 shares of $25 par common outstanding. This compared with $4,710,585 or 97 cents a share in previous year.

Proceeds from the bond issue will be used for construction of a pipe line from the company's new field in Van Zandt County to its own refinery at Smiths Bluff, Tex., to fund floating debt incurred for the commencement of this operation, and for other corporate purposes.

In Van Zandt Field the company holds under lease about 82 per cent of the acreage, the remainder being owned by four other major oil companies. Development is by the unit plan, under management of Pure Oil Co.

"While at this time it is impossible to forecast with any degree of accuracy the possibilities of total production in the field or the maximum potential production of individual wells," Henry M. Dawes, president of Pure Oil Co., states, "the company and the industry generally are very definitely of the opinion that this area, in which Pure Oil Co. owns 82 per cent of the leases, is a very important oil field.

"Geological data derived from the drilling of 20 wells, 10 of which are completed, definitely indicate that the ultimate production of this field will be materially in excess of the Mexia Field, which up to the present time has produced 87,000,000 bbls. of oil. Through the development of this property the company's assets and potential earning capacity are substantially increased."

Statement of Pure Oil Co. and subsidiaries as of December 31, 1929, adjusted to give effect to sale of $20,000,000 5½ per cent notes shows total assets of $216,770,358 comparing with $195,511,767 on March 31, 1929, and surplus of $67,185,282 against $65,875,343 and current liabilities $7,625,826 comparing with $32,232,130 and $6,677,137 respectively on March 31, 1929.

Dixie Gas & Utilities

Dixie Gas & Utilities Co. declared the regular quarterly dividend of $1.75 on the preferred stock, payable April 1 to stock of record March 20.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

Sept. 7	59.16	Dec. 11	50.51
Sept. 14	60.40	Dec. 18	49.24
Sept. 21	57.93	Dec. 24	47.36
Sept. 28	58.63	Dec. 31	48.86
Oct. 5	57.00	Jan. 8	48.56
Oct. 12	59.75	Jan. 15	48.38
Oct. 19	58.70	Jan. 22	47.13
Oct. 26	54.59	Jan. 29	47.46
Oct. 31	42.29	Feb. 5	48.13
Nov. 8	48.31	Feb. 12	47.49
Nov. 15	47.61	Feb. 19	45.85
Nov. 22	47.76	Feb. 26	46.71
Nov. 29	48.60	Mar. 5	46.79
Dec. 4	50.60	Mar. 12	48.30
		Mar. 19	49.72

Union Oil

The $15,000,000 bond issue of Union Oil Co. of California offered was largely oversold immediately after announcement. Vice President L. P. St. Clair of the Union Oil Co. indicated that proceeds of these bonds would be used for

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended March 19 Sales	Week ended March 19 High	Week ended March 19 Low	Week ended March 19 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
23⅞	18	2,500	23½	23	23	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-31-30	37⅝	27⅝	43⅞	27⅛	42⅝	17⅛
34⅛	20½	1,600	32	30¼	31½	American Republics Corp.	(sh)	209,180	N.P.	.....	3-20-29	82⅛	35⅛	85	51⅛	64¾	12½
42	32½	20	42	42	42	Associated Oil		$57,260,300	$25	50cQ	12-31-29	50¼	35	53⅜	37½	47¼	34⅛
49¼	36¼	8,300	48	47⅛	47⅝	Atlantic Refining		$50,000,000	$25	25cQ	12-16-29	131⅝	104	66⅝	50	77⅞	30
28⅜	20⅛	18,300	27⅞	27¼	27⅜	Barnsdall Corp.		$45,235,650	$25	50cQ	12- 7-29	35½	20¾	53	20	49⅛	20
26⅞	19½	8,600	25⅞	25⅛	25¼	Continental Oil of Delaware	(sh)	4,741,554	N.P.	.....	3-31-27	..	..	..	..	47⅛	18
66	49⅛	6,100	65½	63¾	64¼	General Asphalt		$20,785,400	N.P.	50cQ	.....	96¾	65	94⅞	68	94¾	42¼
90	52¼	5,000	88¼	86	87	Houston Oil		$25,000,000	$100	.....	.....	175¾	60⅛	167	79	109	26
27⅞	20¼	9,700	27½	27	27¼	Independent Oil & Gas	(sh)	1,333,572	N.P.	50cQ	1-31-30	32¾	17⅝	38⅜	21¾	39⅜	17⅝
25¼	17⅜	17,600	24⅝	23⅝	24⅛	Indian Refining		$12,307,370	$10	.....	5-31-24	12⅛	7⅝	39⅝	9	53	13⅛
25½	21¼	100	25½	25½	25½	Lago Oil & Transport	(sh)	3,992,122	N.P.	.....	5- 1-27	37¾	20½	39⅛	27⅜	38⅜	16½
10⅜	8	200	10⅛	9¾	9¾	Louisiana Oil Refining	(sh)	1,190,063	N.P.	.....	.....	18⅛	10	19¾	9⅜	18	7
10⅜	5¼	1,000	9¾	9½	9½	Maracaibo Oil	(sh)	330,000	N.P.	.....	.....	22¾	12	25½	12½	18½	5⅛
31¾	16⅛	46,600	31¾	30	31½	Mexican Seaboard	(sh)	1,276,873	N.P.	.....	12-15-20	9¼	3	73	4⅝	69⅜	9¼
31⅜	23½	4,200	30½	29¾	29⅞	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	12-15-29	39⅝	25½	44½	25⅛	39⅞	22⅛
..	..	No sales.				Middle States, ctfs.		$24,298,850	$10	.....	7- 1-23	3¾	1⅝	7⅜	2⅜	5⅛	¾
60¼	51⅝	200	55	54½	54½	Pan American P. & T.		$50,084,700	$50	.....	10-20-27	65⅞	40⅛	54⅞	38¼	69	40½
60¼	50½	600	55	54½	54½	Pan American P. & T. "B"		$121,105,050	$50	.....	11-15-24	66⅜	40¼	58⅞	37¾	69¼	40½
..	..	No sales.				Pan American Western B§		400,000	N.P.	.....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
8¾	4⅛	400	7⅞	7¾	7⅞	Panhandle P. & R.	(sh)	199,370	N.P.	.....	.....	18⅞	8	21¾	11½	15¼	3
50⅛	47½	100	50⅛	50⅛	50⅛	Panhandle P. & R. pfd.		$2,564,400	$100	.....	7- 2-23	83	54	108	70	76	47½
38⅜	29⅛	7,200	37⅞	37½	37¾	Phillips Petroleum	(sh)	2,406,796	N.P.	50cQ	1- 2-30	60¼	36¼	53⅞	35¼	47	24¼
2½	1	3,900	2¼	2⅛	2⅛	Pierce Oil Corp.		$29,622,831	$25	.....	.....	1⅛	½	5¼	½	3⅜	1
6⅞	2¼	23,200	6	5½	5¾	Pierce Petroleum	(sh)	2,500,000	N.P.	.....	.....	5½	2½	7	3½	5⅞	½
52¼	45	1,300	48¾	47⅝	48	Prairie Oil & Gas		$61,720,125	$25	50cQ*	12-31-29	55½	45⅝	68	46	65⅝	40½
60	54⅛	300	55⅞	55⅛	55⅛	Prairie Pipe Line		$101,250,000	$25	75cQ†	12-31-29	190	130¾	280	172	65	45
11⅞	6½	1,700	10⅞	10¼	10½	Producers & Refiners		$37,438,950	$50	.....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
40	31	10	40	40	40	Producers & Refiners pfd. ‖		$2,845,350	$50	.....	5- 1-25	50	36⅞	49⅝	41	46¾	25½
25½	21⅜	6,900	24⅜	24	24⅛	Pure Oil		$75,959,250	$25	37½cQ	12- 2-29	33½	25	31⅝	19	30¾	20
28¼	22¼	3,100	27	26¾	26⅞	Richfield Oil		$47,964,650	$25	50cQ	11-15-29	28⅝	25⅝	56	23	49⅝	20
24½	16½	5,500	23⅞	22⅞	23¼	Rio Grande Oil	(sh)	1,200,000	N.P.	$2.00A	7-25-29	..	..	37½	32	42½	15
54⅝	49¼	4,700	51⅜	50¾	51¼	Royal Dutch, N. Y.	(sh)	611,303	$1.873	.....	9-13-29	54½	44¼	64	44⅝	64	43⅛
47	42⅜	500	43½	43½	43½	Shell Transport & Trading Co. ‖		£19,654,274	£1	$1.45	7-23-29	48⅝	40½	47⅞	41⅜	57½	40⅝
23⅞	21	1,600	23⅜	22¾	22¾	Shell Union Oil	(sh)	13,000,000	N.P.	35cQ	12-31-29	31¾	24⅝	39¼	23¼	31¾	19
35½	22⅞	24,400	34¾	33½	33⅝	Simms Petroleum		$8,060,380	$10	40cQ	12-14-29	25⅜	14¼	27¼	18⅛	40⅛	15
28¼	21⅝	13,300	27¾	27⅛	27⅜	Sinclair Consolidated	(sh)	5,500,000	N.P.	50cQ	1-15-30	22⅜	15	46¾	17⅜	45	21
111	109	400	110⅜	110⅜	110⅜	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-15-29	104½	97	110	102½	111	103
35⅞	28⅞	2,700	34⅞	34¼	34¼	Skelly Oil		$27,237,750	$25	50cQ	12-16-29	37⅜	24⅛	42⅝	25	40½	28
65	55½	3,700	64⅞	63⅜	64¼	Standard Oil of California	(sh)	12,594,098	N.P.	62½cQ	12-16-19	60¾	50⅜	80	53	81⅞	51½
67⅞	58	29,200	67¼	66⅝	66⅜	Standard Oil of New Jersey		$620,079,800	$25	25cQ*	12-16-29	41⅜	35⅛	59⅜	37⅜	83	48
35½	31¼	2,600	34¾	34⅛	34¼	Standard Oil of New York		$434,094,575	$25	40cQ	12-16-29	34⅛	29¾	44¼	28¾	48⅛	31⅜
65⅜	53	1,600	65¾	63½	64⅜	Sun Oil	(sh)	1,297,627	N.P.	25cQ	12-16-29	34⅞	30	77	31½	86⅜	55
8⅝	5¼	2,900	8	7½	7½	Superior Oil Corp.	(sh)	2,324,938	N.P.	.....	12-20-20	..	..	..	..	24	5¼
57½	50⅞	9,800	57⅛	56½	56¾	The Texas Corporation		$211,076,650	$25	75cQ	1- 1-30	58	45	74¾	50	71⅞	50
14½	8⅞	3,800	13⅝	13¼	13¼	Texas Pacific Coal & Oil Co.		$8,380,340	$10	2½ % A‡	12-31-29	18⅞	12	26⅝	12⅛	23⅞	9⅛
23⅞	19½	100	23⅞	23⅞	23⅞	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	12-31-29	29⅛	19	41½	19⅝	40	14
91	86¼	100	89	89	89	Tide Water 5½ % pfd.		$20,705,200	$100	$1.25Q	11-15-29	90⅛	85	100⅛	86	97½	85⅛
15⅜	10⅜	6,400	15	14½	14½	Tide Water Associated	(sh)	4,796,158	N.P.	30cS	2-15-30	19⅛	15¾	25	14⅜	23½	10
84	78	700	81⅞	81	81⅞	Tide Water Associated pfd.		$72,844,300	...	$1.50Q	2- 2-30	..	..	..	..	90⅞	74⅛
20½	16¼	3,500	19	18⅝	18⅝	Transcontinental Oil	(sh)	3,742,029	N.P.	.....	.....	10⅜	3¾	14¾	7¼	15¼	5⅛
47⅜	41⅛	8,500	47⅜	46	46	Union Oil of California		$94,798,100	$25	50cQ	11- 9-29	56½	39⅝	58	42⅜	57	42⅛
36½	33	200	35⅝	35¼	35⅝	Union Tank Car		$31,061,200	$100	$1.25Q	12- 2-29	127½	94	128⅛	110	163¾	121⅞
20⅞	16⅝	4,300	19½	18½	19	Warner-Quinlan	(sh)	356,000	N.P.	50cQ	1- 2-30	34½	24½	44⅞	26	42⅞	15
29½	26	200	29½	29½	29½	White Eagle Oil & Refining	(sh)	490,000	N.P.	50cQ	1-20-30	27½	20	38	20⅛	38	25
18	11½	700	17¾	17¼	17¾	Wilcox Oil & Gas	(sh)	2,400,000	N.P.	.....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock. §Stocks not sold since January 1, 1930. ‖ Bid and ask. x Ex-dividend.
In comparing highs and lows for the several years in the three tables it will be necessary to take into consideration cases where there have been splits in the stock.

company expansion. A large portion of the issue was taken up on the Pacific Coast.

Lion Oil Refining

Lion Oil Refining Co. reports for year ended December 31, 1929, net income of $1,184,478, after interest, depreciation, depletion and federal taxes, equivalent to $4.39 a share earned on 270,000 no-par shares of stock. This compares with $206,411, or 83 cents a share on 250,000 shares in 1928.

Richfield Oil

The Richfield Oil of California and subsidiaries, not including the Universal Consolidated Oil Company and the Richfield Oil Co. of New York, report for 1929 a net profit of $8,554,494, after depreciation, depletion, intangible drilling costs, interest and Federal taxes. After deductions for the 7 per cent preferred stock requirements this is equivalent to earnings of $4.03 a share on the 1,947,241 common shares outstanding at the end of the year, compared with earnings of $3.80 a share on the 1,887,123 common shares outstanding at the end of 1928.

Allowing for Richfield's 51 per cent interest in Universal Consolidated Oil, earnings for the year are equivalent to $4.26 a share on the common stock after giving effect to the common shares issued for the Universal Consolidated interest. Earnings of Richfield Oil of New York from August 15, 1929, to December 31, 1929, were approximately $400,000, the report states. Surplus as of December 31, 1929, was $11,351,718. Total assets were $131,974,815.

Reiter-Foster Oil

Net profit of Reiter-Foster Oil Corp. for year ended December 31, 1929, was $229,184 after expenses, depletion and depreciation, against $415,532 in 1928. Capital stock amounts to 376,657 no-par shares.

Washington Oil

Washington Oil Co. reports for year ended December 31, 1929, net profit of $152,314 after taxes, depreciation and depletion, equal to $7.70 a share (par $25) on 19,767 average number of shares of stock outstanding during the year, and $6.43 a share on 23,686 shares outstanding at end of year. This compares with net profit of $129,473 in 1928, equal to $8.17 a share on 15,849 shares outstanding at close of that year.

Lone Star Gas

Lone Star Gas Corp. reports for year ended December 31, 1929, net profit of $6,540,581 after depreciation, depletion, taxes and reserves, equivalent to $1.82 a share (par $25) on 3,595,841 shares of common stock. This compares with $4,824,805, or $3.35 a share, on 1,438,130 shares outstanding in 1928.

General Asphalt

The General Asphalt Co. for 1929 is expected to show earnings of approxi-

(Continued on Page 151)

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended March 19 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
⅝	⅛	8,700	1/16	¼	¼	Amer. Con. Oilfields		$11,018,000	$5	.....	.....	2 1/16	.55	1½	.53	72c	⅛
3¼	1½	200	2⅜	2⅛	2⅜	Amer. Maracaibo	(sh)	700,000	N.P.	.....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
..	..	No sales.				Argo Oil	(sh)	683,971	$10	.....	.....	2¾	1	4½	2¼	5	1½
..	..	No sales.				British American§		1,311,321	N.P.	25cQ*	1- 2-30	40	20½	55	32¾	62	7⅞
2⅛	¾	500	1¾	1¾	1¾	Carib. Syndicate		$131,250	25c	.....	.....	28¼	15½	4½	3⅞	4⅞	1
39⅝	26½	22,100	39⅝	39⅛	39⅜	Cities Service	(sh)	24,290,359	N.P.	30cA†	1- 2-30	58⅜	40¼	90⅞	54	68⅛	20
92¼	88	500	92¼	91¾	92¼	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	1- 2-30	95⅜	87	103½	94½	98¾	84
⅝	¼	4,200	⅝	1/16	1/16	Colombia Syndicate		$2,000,000	$1	.....	.....	3⅞	1⅛	3¼	.76	2	⅓
..	..	No sales.				Cons. Royalty		$5,000,000	$10	15cQ	10-25-29	9⅜	6⅜	8⅞	6¼	11⅛	2½
7½	5⅝	1,000	7⅜	7¼	7⅜	Creole Petroleum	(sh)	5,977,873	N.P.	.....	.....	14⅞	9½	17½	9½	11⅝	5⅝
1	¼	100	¾	¾	¾	Crown Central	(sh)	578,000	N.P.	.....	.....	3	.50	3¼	.76	2½	¼
10¼	7¼	7,700	10¼	8½	10¼	Darby Petroleum	(sh)	1,019,392	N.P.	25cQ	1-15-30	12	4	33½	3¼	26	6⅛
5¾	4½	500	5¾	5½	5½	Derby Oil & Refining	(sh)	500,000	N.P.	.....	.....	2½	74	2¼	1	11	2
35½	30	300	35½	35	35½	Derby Oil & Refining pfd.§		48,500	N.P.	.....	.....	16¾	4	21⅛	7½	44	20⅜
154⅞	131¼	5,500	152½	150	150	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	1- 1-30	118	86¼	165	101⅜	209	115
1½	¾	2,400	1	⅞	⅞	Intercontinental Pet.		$5,682,000	$5	.....	.....	2½	.80	3⅜	1	2⅞	⅜
2½	1⅞	800	2¼	2¼	2¼	Kirby Petroleum	(sh)	750,000	N.P.	.....	.....	2¼	1⅛	3	1¼	3⅝	1¼
4	1¼	5,800	4	3⅜	3¾	Leonard Oil & Dev.		$50,000,000	$25	.....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
25¼	18⅝	100	24⅞	24⅞	24⅞	Lion Oil & Refining	(sh)	250,000	N.P.	50cQ	1-31-30	27½	20	43⅞	20	38⅞	18
43⅜	34⅛	6,100	42⅞	42	42⅜	Lone Star Gas	(sh)	5,000,000	N.P.	20cQ	12-31-29	59⅜	37	69⅛	48½	67⅞	28
⅜	¼	400	5/16	5/16	5/16	Magdalena Syndicate	(sh)	850,000	$1	.....	.....	2⅞	.80	1⅞	.50	1¼	¼
..	..	No sales.				Margay Oil§		160,000	N.P.	50cQ	1-10-30	52	12	48½	32	38½	14
3½	2	300	2⅞	2⅝	2⅝	Mexico-Ohio Oil		.....	...	.....	.....	12⅛	5	8	2¾	6⅜	2½
¾	½	700	¾	⅝	¾	Mountain & Gulf		$4,000,000	$1	2cQ	1-15-30	1½	1	1¾	.76	1½	¾
9⅞	8	600	9⅞	9¼	9¾	Mountain Producers		$1,682,182	$10	40cQ	1- 2-30	29¼	22¾	28⅞	19½	22⅞	7
2⅞	2½	400	2⅞	2¾	2⅞	New Bradford Oil		$1,095,291	$5	12½cQ	1-15-30	5⅞	4⅝	5⅝	4¼	5	2¼
7¼	3½	1,500	6⅞	6⅞	6⅞	New Mex. & Arizona		$1,000,000	$1	.....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
9½	6⅞	100	9¼	9¼	9¼	North Central Texas	(sh)	400,000	N.P.	15cQ	12- 2-29	12¾	9½	14¼	8½	18½	6⅛
2¼	1	23,000	2¼	2	2¼	Pandem	(sh)	489,875	N.P.	.....	.....	9⅜	3¼	6	2⅛	3½	½
4	1⅞	900	2⅞	2⅞	2⅞	Pantapec Oil	(sh)	1,506,600	N.P.	.....	.....	12⅛	7	15⅝	8½	10¼	1⅞
..	..	No sales.				Pennok Oil§		150,000	N.P.	.. ...	.....	13½	5⅛	7¾	4⅞	7⅜	4⅜
10	9	200	9	9	9	Red Bank Oil	(sh)	250,000	N.P.	.....	.....	24⅜	7	18	4⅞	16	9⅝
3¾	2⅛	500	3	3	3	Reiter-Foster	(sh)	388,584	N.P.	10cQ	12- 2-29	15½	3½	12⅞	4½	8½	1⅛
4⅝	3⅝	200	4¼	4¼	4¼	Ryan Consolidated	(sh)	500,000	N.P.	.....	.....	7	4½	12	4⅜	11	3
2½	2	100	2½	2½	2½	Salt Creek Consolidated	(sh)	1,286,300	$10	10cQ	1- 2-30	8	5¼	7¼	5½	5⅞	1⅞
12¾	10	200	12½	12½	12½	Salt Creek Producers	(sh)	1,496,859	$10	50cQ	2- 1-30	35½	27¼	35	23⅛	25⅞	9
..	..	No sales.				Savoy Oil§		$750,000	$5	.....	.....	7	1¼	3½	1	2½	1/16
19½	16	400	16¾	16½	16¾	Transcontinental pfd.		.....	...	.....	.....	..	..	..	..	..	..
4½	2¼	1,500	3⅞	3⅝	3⅞	Venezuelan Petroleum	(sh)	755,090	$5	5cQ	11-15-29	7⅜	4¼	9⅛	4⅜	6½	1⅜
8	2	400	2	2	2	Woodley Petroleum		$500,000	$1	.....	.....	7	4⅜	8¼	4⅞	9½	2
1⅞	½	200	1¼	1¼	1¼	Y Oil & Gas (new)§		100,000	N.P.	.....	.....	6	1¾	8⅜	2⅛	2⅞	¼

*Including one-half per cent monthly in stock. x Ex-dividend. †Payable monthly and a monthly stock dividend of one-half per cent. ‡Cents per share.
§Stocks have not sold since January 1, 1930.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended March 19 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
17⅝	14	100	14	14	14	Anglo-American Oil (nv)		£4,192,635	£1	.36 1/16	11-27-29	21⅝	17⅞	22⅜	14⅞	17	11
¾	½	100	½	½	½	Atlantic Lobos		.....	...	.....	.....	..	..	..	..	..	..
25	23¼	50	23¼	23¼	23¼	Borne Scrymser§		$1,000,000	$25	$1S.A.	10-15-29	69	50	56½	44½	46½	25
69	63⅞	200	64	63⅞	64	Buckeye Pipe Line		$10,000,000	$50	$1Q	12-14-29	60	45	76	53	74¼	55
166½	155	700	160	160	160	Chesebrough Mfg.		$3,000,000	$25	$1Q*	12-30-29	126	76½	161	117	210	130
16⅞	12⅛	100	16⅞	16⅞	16⅞	Continental Oil		$36,057,840	$10	.....	12-15-27	22⅝	16¼	23	16	29	10
53	41¼	100	41¼	41¼	41¼	Cumberland Pipe Line		$1,500,000	$50	$1Q	12-15-29	137	89	114	67	75¾	40
54¾	50	100	50	50	50	Eureka Pipe Line§		$5,000,000	$100	$1Q	11- 1-29	68½	47	88	64⅛	70½	42
3¾	2½	100	3	3	3	Galena Signal Oil etfs of dep.		$16,000,000	$100	.....	.....	13½	3½	13	4¼	6½	3
109¾	78	2,600	106½	103	103	Humble Oil & Refining		$74,103,300	$25	50cQ	1- 1-30	68½	54	114¾	59¼	128	74⅛
311	305	100	308	307¼	308	Illinois Pipe Line		$20,000,000	$100	$10S.A.	12-16-29	182	123¾	290½	176½	340½	260
27⅜	22⅛	700	26¼	25⅝	25⅝	Imperial Oil Co., Ltd.	(sh)	26,421,768	N.P.	12½cQ	12- 2-29	64¾	37⅜	104	56¾	41	22
41	38⅝	400	38⅛	38⅛	38⅛	Indiana Pipe Line		$3,000,000	$10	50cQ‡	2-15-30	94½	61	91⅞	74⅜	41⅞	26
22⅛	17⅞	900	22	21½	21⅞	International Pet.	(sh)	14,247,088	N.P.	12½cQ	12-16-29	29	28¼	55	35	30⅜	15
22⅜	19⅞	200	20⅛	20⅛	20⅛	National Transit		$6,362,500	$12.50	25cQ‡	12-16-29	24	13½	32⅜	19⅜	25⅛	10½
18¼	16	100	16	16	16	New York Transit§		$1,000,000	$10	40cQ§	1-15-30	44½	31¼	75	38½	17½	10
..	..	No sales.				Northern Pipe Line		$2,000,000	$50	$2S.A.	1- 2-30	100	70	69	56½	63	41
71¼	66⅛	200	71	70¼	71	Ohio Oil		$60,000,000	$25	50cQ‡	12-14-29	67⅞	52	84	58½	79⅞	64⅛
22½	20	400	21⅞	21	21⅞	Penn Mex. Fuel		$10,000,000	$25	50cQ	12-14-29	39	12	84	28	44½	20
33	25	100	25	25	25	Solar Refining		$4,000,000	$25	$1.25S.A.	12-20-29	..	..	..	..	50	29
16¾	13	100	14½	14½	14½	Southern Pipe Line		$1,000,000	$10	50cQ	.....	27¼	15½	19	15	22½	13
44⅛	37½	300	43⅞	43¼	43¼	South Penn Oil (new)		$30,000,000	$25	50cQ	12-30-29	41½	35	71⅞	36¾	60¼	35⅛
64	50¼	50	50¼	50¼	50¼	Southwest Pa. Pipe Lines		$1,750,000	$50	$1Q	10- 1-29	83	55½	102	70	70	60
54¾	49⅞	5,400	54½	53⅝	54	Standard Oil of Indiana		$348,175,069	$25	62½cQ‡	12-16-29	81½	64⅝	95⅞	70⅞	63	45
31⅜	27⅛	2,400	31¾	30⅞	31⅜	Standard Oil of Kansas		$8,000,000	$25	50cQ	12-16-29	20⅞	14⅝	37¾	15	33¾	18
37⅛	33¼	600	36⅝	36⅜	36½	Standard Oil of Kentucky		$25,654,516	$10	40cQ	12-16-29	130	111½	179¾	122¼	46⅞	29
48¼	44⅛	200	47⅜	47⅜	47⅜	Standard Oil of Nebraska		$4,649,225	$25	62½cQ‡	12-20-29	49½	40	54⅞	39⅞	50¼	40
89¾	81	200	89¾	89¾	89¾	Standard Oil of Ohio		$14,000,000	$25	62½cQ	1- 2-30	87½	72	134	71	129	60
..	..	No sales.				Swan-Finch Co.		$861,466	$25	.....	12- 2-29	21	14½	23½	16	18	10
96⅞	88⅛	1,600	94⅜	93	93½	Vacuum Oil Co.		$126,180,350	$25	$1Q	12-20-29	..	..	111	72	133¾	75

Note—High and low on all stocks selling this week are for 1930.
*Plus 50 cents extra. †Stocks not sold since January 1, 1930. ‡Plus 25 cents extra. §Plus 10 cents extra. x Ex-dividend.

PROBLEM OF DRAINAGE AT KETTLEMAN HILLS

(Continued from Page 40)

the greater temperature counteracts this tendency completely and goes to an excess sufficiently to vaporize all. From this we may conclude that if the oil and gas, on its migration into the dome, passed at depths equal to or greater than 9,400 feet below sea level, they passed in gaseous phase alone. Such an event seems clearly to have happened. The oil as we find it today, is merely condensed vapor.

Oil and gas do not come directly from the main body of the sand into the well, but the compact, hard, fine-grained sands which constitute perhaps over 90 per cent of the entire formation, first produce into the coarser, more permeable interlying strata, while these in turn carry the fluids to the well. Neither should this fact lessen our regard for the economic value of these wells.

Origin of the Pressure

Probably there will be no dissension concerning the origin of the pressure at Kettleman Hills. Nor will there be any

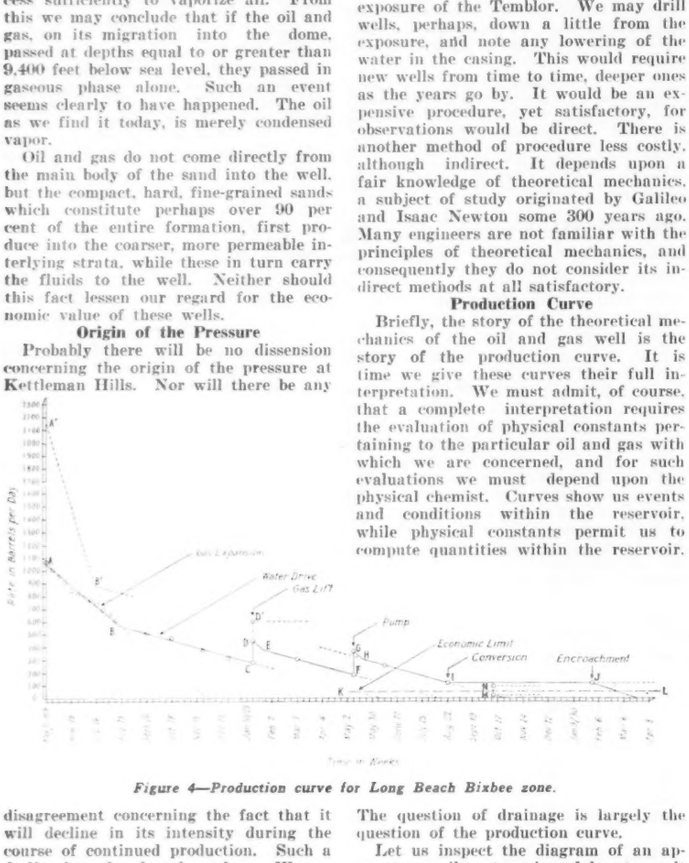


Figure 4—Production curve for Long Beach Bixbee zone.

disagreement concerning the fact that it will decline in its intensity during the course of continued production. Such a decline has already taken place. We see its effects in a decreased rate of production at the wells. Thus far the decline is small; it will be greater as time goes on, at least for a number of years, depending upon the number of wells brought in on production. Like dipping soup out of the kettle, the faster we ladle, the faster the pressure head on the bottom of the kettle declines. We cannot eat the soup and maintain its level in the kettle at the same time.

What does the decline in pressure mean? Are we to infer that the height of water in the formation near the outcrop decreases with production? Not in all oil and gas fields does it do so; in fact some formations must be producing without any such column of water. How are we to know about this particular field? The matter is important, for if it is true that the height declines we can say definitely that the water surrounding the pool at Kettleman Hills will encroach upon the field and eventually flood the entire area. If it does not decline, the edge water will not encroach upon the field, but it will remain fixed in position, as it does in the Cushing Field, Oklahoma, in the Salt Creek Field, Wyoming, and in the Bradford Field, Pennsylvania. In the latter field we are flooding artificially, because nature will not do it for us.

Water Encroachment

Clearly, then, this matter of declining water level at or immediately below the outcrop of the Temblor is closely connected with the subject of water encroachment, and furthermore, it is closely connected with the subject of percentage recovery from the field. Water encroachment means high recovery, 75 to 95 per cent, while absence of encroachment means lower recovery, 10 to 60 per cent under the ordinary procedure in development. With water encroachment a string of wells, say 10 or 20, along the axis of the North Dome will produce all the oil and gas recoverable from the structure. Without water encroachment we must drill the entire structure, with wells more or less regularly spaced, in order to get a fair proportion of the recoverable fluids.

It is agreed that we cannot watch a possible decline of the water level at the exposure of the Temblor. We may drill wells, perhaps, down a little from the exposure, and note any lowering of the water in the casing. This would require new wells from time to time, deeper ones as the years go by. It would be an expensive procedure, yet satisfactory, for observations would be direct. There is another method of procedure less costly, although indirect. It depends upon a fair knowledge of theoretical mechanics, a subject of study originated by Galileo and Isaac Newton some 300 years ago. Many engineers are not familiar with the principles of theoretical mechanics, and consequently they do not consider its indirect methods at all satisfactory.

Production Curve

Briefly, the story of the theoretical mechanics of the oil and gas well is the story of the production curve. It is time we give these curves their full interpretation. We must admit, of course, that a complete interpretation requires the evaluation of physical constants pertaining to the particular oil and gas with which we are concerned, and for such evaluations we must depend upon the physical chemist. Curves show us events and conditions within the reservoir, while physical constants permit us to compute quantities within the reservoir. The question of drainage is largely the question of the production curve.

Let us inspect the diagram of an apparatus easily set up in a laboratory; it represents a water tank, flow line and surge chambers, with the production curve of the system. The chambers contain air before the tank is filled with water. With the valve closed at the right, and with the tank filled to A, the air in these chambers occupies one-half its previous volume; the water line stands along a line B.

The air in the chambers possesses energy—energy derived from the water that is compressing it. It has no mechanical energy that can be said to be intrinsically its own, for that which it has is due entirely to the water. If we should connect one or more of these chambers with an air compressor, the best we could do would be to increase the head by the amount B to C. Thereafter air would simply travel to the tank and escape through the water.

Expansion of Air

The air in the chambers can perform work, if given the opportunity to expand. In this capacity it may be said to act as an agent for the water, in as much as it expends energy which rightfully belonged to the water. To get this performance of work we can open the valve and allow production to take place. Now the air expands in each chamber according to a kinetic pressure gradient, the upper line at B′ which in this tubular system is a straight inclined line. During this expansion we obtain data for the curve MN. It is a straight inclined line appearing to approach zero production at a point N′. During this expansion, A, if it moves at all, moves very little. As soon as the kinetic gradient is established the internal conditions of production change. No more work is performed by the air in the chambers; all work is now performed by the water; A lowers in accordance with production, and B′ lowers correspondingly with A. At a postion A′ we find a gradient such as the lower line at B′. The air in the chambers now expands only to accommodate itself to lowered pressures exerted by the head of water. The system produces solely by water drive, and the data of production gives us the straight inclined line NO. While the air is expanding and performing work the apparatus can be said to be in flush production, whereas during the water drive it can be said to be on settled production.

In Figure 4 the line ABC represents the average of 127 producing wells in the Bixbee zone of the Long Beach Field. The curve is drawn from actual field data. AB appeared to approach zero production at November 25, 1928. It turned, however, to C in a direct line for zero production at June 6, 1929. In as much as the productive formation contains both oil and gas, and as the gas can act in the manner of the air in the preceding figure, we are justified in claiming that AB represents production on gas expansion, where edge water, if it moves at all, moves very little, and that BC represents the water-drive, where water is alone in causing production; consequently where edge water must encroach upon the pool before the oil can be obtained.

Difference in Systems

There is a difference between the systems of the two figures to be fully recognized. Air in the surge chambers stays where it is during the process of production, expanding as already noted. Gas in the Bixbee zone travels toward the well. Though the surge-chamber effect applies as well to one system as to the other, the "chambers" in the natural system are within the zone itself. In either system, the expansive fluid at a fixed distance from the orifice attains a state of equilibrium in accordance with the kinetic pressure gradient (a surface with the shape of a spout in the natural system), and whether it is the same fluid or continually new fluid which adjusts itself to this gradient makes no difference. Expansion takes place without the performance of work.

At January 17, 1929, the conditions of production were gradually altered. Natural flow at many of the wells had reached an undesirable low point, and one well after another was placed on the gas-lift. The remainder of this figure cannot concern us here. The drawing was prepared for another paper, wherein an attempt was made to explain the function of gas in the production of oil in California. The question which confronts us now is: Does the curve for wells at Kettleman Hills display the same feature? If it does so, we may be equally assured of encroachment, for the curves of any wells where encroachment is impossible are quite different in a well defined way.

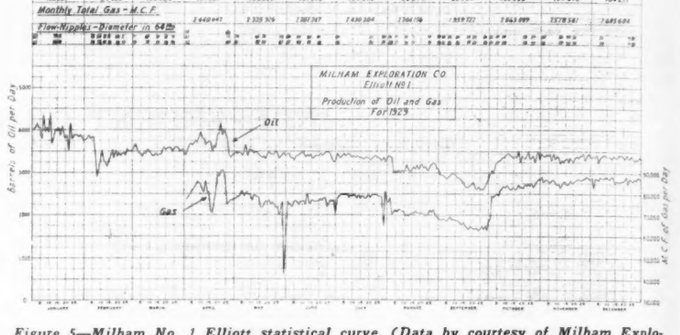


Figure 5—Milham No. 1 Elliott statistical curve. (Data by courtesy of Milham Exploration Co.)

Record of Production

There is a daily record of production from the Milham Elliott well No. 1 for the year 1929. Undoubtedly it is a faithful record; therefore it has statistical value to the company, although it has the appearance of the teeth of an old saw. Perhaps no two of us, if alloted the task, would draw the same straight line to represent the average production curve. It appears to indicate a decline, though of that we can not be certain. Furthermore, flow-nipples, or beans, were adjusted from time to time and these manipulations affected the curve. From the point of view of theoretical mechanics, nothing of definite value can be deducted from it. It is a simple matter, however, to draw a more satisfactory curve.

Here the monthly total in barrels of oil is reduced to barrels of oil per square inch bean per day. Now we can draw the customary two straight lines and proceed to interpret the situation.

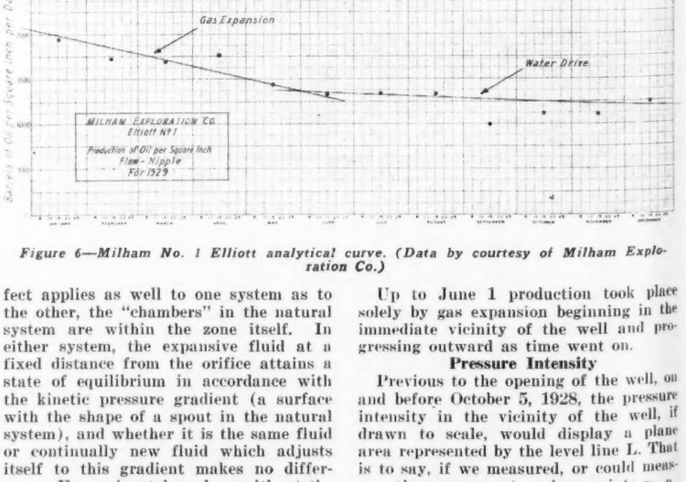

Monthly Total Oil - Bbls.
Flow Nipple Area - Sq. In.
Bbls. Per Sq. In.
Bbls. Per Sq. In. Per Day
Gas Expansion
Water Drive
MILHAM EXPLORATION CO.
Elliott No 1
Production of Oil per Square Inch
Flow - Nipple
For 1929
Barrels of Oil per Square Inch per Day

Figure 6—Milham No. 1 Elliott analytical curve. (Data by courtesy of Milham Exploration Co.)

Up to June 1 production took place solely by gas expansion beginning in the immediate vicinity of the well and progressing outward as time went on.

Pressure Intensity

Previous to the opening of the well, on and before October 5, 1928, the pressure intensity in the vicinity of the well, if drawn to scale, would display a plane area represented by the level line L. That is to say, if we measured, or could measure, the pressure at various points c_1, c_2, c_3, etc., within the reservoir, and adopt a proper scale between pounds per square inch and an inch vertically on the drawing, we would locate a_1, a_2, a_3, etc.

After the well started to flow a measurement of the new pressures would show a drop to points b_1, b_2, b_3, etc. The line

L fell to the lines M. These lines describe a surface shaped like a spout or morning-glory blossom. It is the kinetic pressure gradient previously mentioned, accompanying flow which takes place from all directions radially about the well. The spout grew in depth and extent from October 5 to June 1. This was the well's period of flush production. The drawing here shows it in its mature state. On June 1 it was fully grown: the pressure exerted by the column of water in the formation would not permit further growth. The water began to move down from the exposure and edge water began to encroach upon the pool, while the spout maintained its full size. The well is on settled production.

When the Continental Elliott well 12-8 was opened in September the Milham spout was disturbed. A bigger one became necessary. The Continental well punctured its side and as a result we see points too low for three months. On the fourth month—December—the wells were in agreement and the point raised to its proper postion.

Water Drive

Gas expansion was followed by water drive. What happened for the Continental well?

There was no record for September, in as much as the well was out of control. It required eight months for the Milham well to build its spout. Why is there no sign of a corresponding period here? Two reasons: First, the well built its spout very rapidly when it was blowing wide open, and secondly, it did not have to build a complete spout, for the Milham well had nearly a complete one ready for

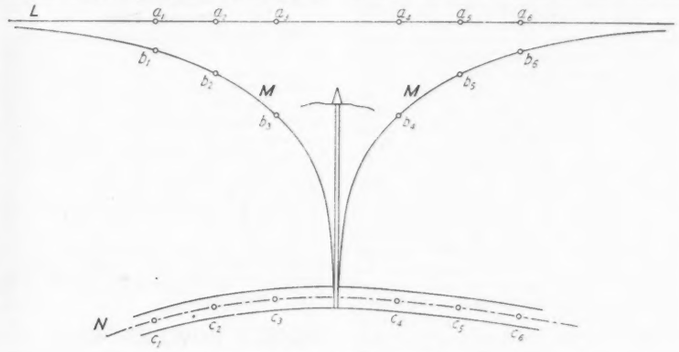


Figure 7—Static and kinetic pressure gradients.

it. All the Continental well had to do was to excavate one side.

Let us not take these spouts too literally. They are only representations of pressures; they do not designate a liquid level, though they do designate the amount of space occupied by the expanded gas as the well is approached from the side.

Four Offsetting Wells

There are now four mutually offsetting wells at this locality on the dome, and three of them are producing. What would take place if they were all closed in? The compound spout they now possess would fill in once more, and a pressure diagram, about eight months after the closing, would again show a level line like L in the preceding figure, though a trifle lower on account of the decline in the head of water. Water encroachment would continue for these eight months during the filling process, then cease. Another opening of the wells would cause a repetition of the process; first gas expansion, then water drive. To illustrate this feature we may cite the February test for the socalled Potential Flow at Santa Fe Springs. By curtailment the size of the spouts in the various zones had been reduced. On opening the wells the gas once more expanded to form larger spouts. Curtailment again after the test forced the spouts to become smaller. Under any conditions the spouts acquire a state of equilibrium denoting encroachment of edge water.

However we may manipulate the wells the spout changes in size, and consequent changes in the advancement of edge water come later.

We have noted from the first of June until September the Milham Elliott well possessed an individual full-grown spout. The space occupied by this spout was sufficient to hold approximately 971,500 bbls. of oil and 21,956,000,000 cubic feet of wet gas measured at atmospheric pressure. Reduce these quantities to pore space and formation space occupied under pressure in the formation and we have the cubic contents of the spout: 971,500 bbls. of oil, 2,345,220 cubic feet of pore space, 117,261,000 cubic feet of formation.

We know its geometrical shape; consequently we may learn, if desirable, the quantitative features concerning this provisional effect of production on the pool in the vicinity of the well. More important, however, are the irreparable effects of water encroachment at the edge of the pool.

The General Petroleum Ochsner well 26-2 is not open. Whenever it may be opened it will produce for a time on gas expansion, then the edge water will start to move for it. Each well will have its own cycle; each affects the edge water separately.

Edge Water

We need not expect the edge water to move regularly according to contour lines on the structure. It will crawl up the sides more rapidly nearest the wells. The faster we produce, the more rapid the ascent. Nature will try to help us. She will pull the water line down in an attempt to straighten it out to a level. If we produce slowly and carefully she will help us considerably.

If it were not for this localized ascent of edge water on the dome, one well at the crest would be sufficient to drain the entire pool, given sufficient time. As matters stand, 10 or 20 wells along the axis would be better, for the approach of the water would be more nearly in accord with the contour lines of the dome.

Gas-Oil Ratio

In consideration of the distribution of oil and gas in the reservoir we may believe that any variation in the gas-oil ratio will be very slight over the structure. In this respect the Kettleman Hills reservoir can be expected to differ from other reservoirs in this state. The oil in the canals between pores is difficult to remove by the spraying action of the gas. It will cling in thin films as long as it can to the solid walls. The encroaching water, however, can remove it, for there is a greater attraction between quartz and water than between quartz and oil. If edge wells are drilled and placed on production, it is probable that the approach of edge water will be foreshadowed by a sudden decrease in the gas-oil ratio, since the water will gather oil before it and sweep it toward the well.

We do not know the size of the pool as yet. All that can be said is that it does not extend below the lowest closed contour of the domal structure. This contour is approximately 35 miles in circuit. The thickness of the formation is not known; already penetration has reached 1,000 feet. If we wish to assume these values to be safe approximations we can calculate the yearly encroachment of the water in square feet, and distribute this area according to our fancy at the edge-line near the wells. In this way we obtain a fair idea respecting the rate of encroachment upon the pool, for we know the total amount of oil and gas produced from the wells since June 1, 1929, and the physical chemist can easily compute the space such production occupied at depth, under the known pressure conditions. Our calculation of course must pertain to the period subsequent to

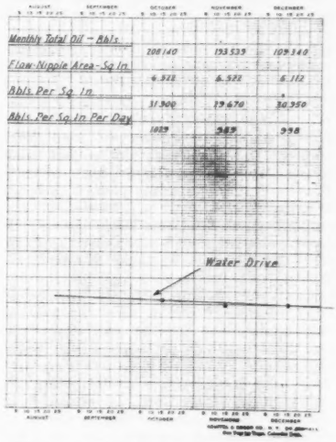


Figure 8—Continental Elliott analytical curve. (Data by courtesy of Continental Oil Co.)

June 1, since the water started to encroach at that time: 695,300 bbls. of oil, 83,923,400 cubic feet of pore space, 699,360,833 cubic feet of formation space, 699,361 square feet of area.

Most of the encroachment, let us say, is confined to a water front 1½ miles in length: 88.3 feet advancement in 7 months, 151.4 feet advancement in 12 months.

Yearly Advancement

This is the yearly advancement on two sides of the pool. Arbitrarily we may divide the amount between the southwest and northeast sides in the ratio of 2 to 1: 100 feet approximately on the SW, 50 feet approximately on the NE.

These are the yearly effects of the Milham well alone. The method of calculation is somewhat crude; nevertheless it does give us an idea of the order of magnitude of encroachment.

Admitting that we do not know the exact acreage covered by the pool, we can however calculate the recovery per acre: 43,560 square feet area, 43,560,000 cubic feet of formation space, 5,227,200 cubic feet of pore space, 32,485 bbls. of oil, 734,185,000 cubic feet of wet gas, 17,655 bbls. of gasoline, 50,140 bbls. of oil and gasoline.

Perhaps we are safe in estimating the proved acreage at 9,340 acres. We then have: 303,420,000 bbls. of oil, 6,857,290 millions of cubic feet of wet gas, 164,201,540 bbls. of gasoline.

There are 15,160 additional acres which may prove to be productive, bringing the possibilities of the entire reservoir to: 795,779,460 bbls. of oil, 17,984,620 millions of cubic feet of wet gas, 432,487,284 bbls. of gasoline. These figures are all based upon 1,000 feet of productive formation and 75 per cent recovery.

The proved acreage lies within the contour 6,000 feet below sea level on the top of the Temblor formation, and the possible acreage extends from here to the contour 7,800 feet below sea level. Let us for the present say that the probability of striking oil at the 6,000-foot contour is 100 per cent, while the probability at the 7,800-foot contour is zero; then the probability between these contours ranges according to depth.

Drainage One Problem of Many

The problem of drainage is but one of many problems concerning subsurface conditions in this reservoir. Much information is already at hand with respect to the physicochemical nature of liquid and vaporous phases throughout the range of high pressures and high temperatures existing at depth on the dome. I regret that we can not consider these additional features now, even in so far as they will affect a rational development of the field.

If time were ample it would profit us to consider at equal length the mechanics of a curve from the Mid-Continent and eastern fields, where production comes by virtue of gas expansion exclusively; where edge water plays no part in production except to define for once and all the location of the limits of the pool. Production curves in those fields are not of straight lines, but of beautifully accurate parabolas. There is a spout surrounding the well, but only in edge wells can it reach to the edge water. Calculations respecting recovery must be made upon a basis entirely different from the present one. Without a presentation of this other story I feel that I depend too greatly upon your generosity in accepting the present paper on faith alone.

NEW PROPERTIES OF AUTOMOTIVE LUBRICANTS

(Continued from Page 41)

ley[4,5] at Mellon Institute has shown that although the formation of carbon in an engine may be roughly proportional to the carbon residue in oils of similar types made from similar crude oils, the carbon residue test is not a measure of this tendency if oils from different crude oils are compared, and it appears that even if oils from the same crude oil were compared, if the methods of refining were different, the tendency toward formation of carbon in the engine might bear no definite relation to the carbon residue test. In other words, except when comparing oils refined by similar methods from similar crude oils, the carbon residue test is an identification test rather than a quality test.

Another factor which tends to make the carbon residue test of less value is the great effect of operating conditions of the engine. Several years ago the Bureau of Standards[6] showed that an engine could be operated on a certain oil until it was badly carboned, and then without changing oil or gasoline but by making the mixture leaner and operating at a higher temperature, the carbon could be burned out, producing a clean engine.

Since lubricating oils are used to lubricate bearings, a very desirable property is the ability of the oil to separate the surfaces and thus avoid metal-to-metal contact. As the result of the work of a number of investigators[7] it has been found that the coefficient of friction, for fluid film lubrication, is proportional to

$$\frac{Zn}{P},$$

where Z is the absolute viscosity of the oil, n is the speed of rotation, and P is the load in pounds per square inch of projected area. In other words, for fluid film lubrication, the load carrying ability of an oil depends on its viscosity and the higher the viscosity of an oil the greater the load it will carry, but the greater the friction that will be developed at any definite speed and load.

Failures in Lubrication

It has been found that fluid film lubrication fails when either or both the viscosity of the oil or the speed are too low or when the load is too high. There is some question as to how low viscosity can be before a lubricant is too thin for use in an automobile engine. Taylor[8] states:

From the results of tests made, it appears that, with oils generally used for automobile engine lubrication, whether light or heavy in grade, no increase in the friction nor increase in the bearing temperatures for dilution of the oils up

[4] C. J. Livingstone and W. A. Gruse, "Carbon Deposits for Lubricating Oils," Journal of Industrial and Engineering Chemistry, Vol. 21, p. 904 (1929).

[5] C. J. Livingstone, S. P. Marley, and W. A. Gruse, "Motor Carbon Deposits Formed Under Controlled Conditions from Typical Automobile Oils," Journal of Industrial and Engineering Chemistry, Vol. 18, p. 502 (1926).

[6] "Carbon Removed by Loading," Journal, Society Automotive Engineers, December, 1924, p. 490.

[7] Journal of Industrial and Engineering Chemistry, Vol. 14, p. 652 (1922).

[8] A. L. Taylor, "Dilution Effects on Friction Coefficients and Bearing Temperatures," Journal, Society Automotive Engineers, Vol. 18, p. 41 (1926).

to 60 per cent occurs, provided the bearing pressure is not in excess of 286 pounds per square inch. Bearing pressure in automobile engines is usually not in excess of this figure. With heavy oil the bearing pressure may be increased considerably. Many machines are in operation using oil diluted between 25 and 50 per cent, and are experiencing no apparent ill effects from this dilution. The tendency to attribute burned out bearings and scored cylinders to dilution of the oil does not seem to be justifiable.

Our engineers calculate bearing pressures in automobile engines at several times the value of 286 pounds per square inch given above by Taylor, but we have not been able by our tests to establish what we believe to be the minimum value of viscosity from the standpoint of load carrying ability of the bearings. Tests which we made using such a light oil diluted with 50 per cent kerosene were described in a previous paper[9]. We recently made some tests to determine the effects of low viscosity due to high temperature. We used a 1929 model 6-cylinder engine (3⅝-inch by 5-inch) and operated at 3,250 revolutions per minute, full load, using an oil with a viscosity of 300 and 100° F. We held the temperature in the oil pan at 300° F. The viscosity of the oil was somewhere below 40 Saybolt at this temperature. The actual temperature in the bearings was probably much higher and since the Saybolt viscosimeter cannot be used to measure the viscosity of oils when they are so thin, the actual viscosity under our operating temperature is not known exactly. In order to make the test more severe the babbitt metal bearings were cut away until they had only one-third their original area. This engine was then operated under these conditions for a number of hours, at one time for 10 hours continuously, but no bearing trouble was experienced. If the bearing clearances had been greater, the thin oil might have increased the pounding effect in the bearings, and it is possible that under these conditions failure could have occurred due to fatigue of the babbitt metal.

It appears that noise, excessive oil consumption, and perhaps other troubles, are the determining factors which establish the minimum viscosity that can be used, rather than the actual load carrying ability of the bearings. It should not be understood from this discussion that excessively thin oil or abnormally high bearing loads are recommended, since an engine that is given proper care will usually give a better account of itself than one that is abused, but the fact remains that the minimum permissible oil viscosity for an oil to be used in an automobile engine is still undetermined.

"Oiliness"

When fluid film lubrication fails, the property of "oiliness" is important. It is a property that is not very well understood although examples of oils differing in "oiliness" are very common. "Oiliness" has been defined by Wilson and Barnard[10] as the property of lubricants by virtue of which one fluid gives a lower coefficient of friction than another fluid of the same viscosity, generally at low speeds or high loads. When operating in the field of fluid film lubrication, oiliness is of no value, but if the film should fail from too high a load or too low a speed an oil that has the property of oiliness may possibly prevent scoring or seizing. Wilson and Barnard[11] state:

"With the exception of the lubrication of the bands of a planetary transmission, it has not been definitely demonstrated that oil of high 'oiliness' is of any real advantage in the operation of an automobile engine . . ."

[9]H. C. Mougey, "Sulphur in Gasoline from the Automobile Standpoint," Journal of Industrial and Engineering Chemistry, Vol. 20, p. 18 (1928).

[10]R. E. Wilson and D. P. Barnard, "The Measurement of the Property of Oiliness," Journal, Society Automotive Engineers, Vol. 11, p. 142 (1922).

[11]R. E. Wilson and D. P. Barnard, "The Significance of Various Tests Applied to Motor Oils," Proceedings, American Society for Testing Materials, Vol. 28, Part II, p. 684 (1928).

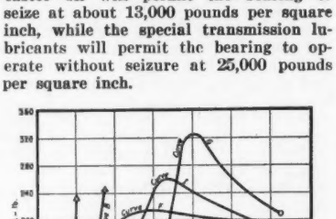
Our experience is certainly in accord with this statement. Automobile engines will operate so well with oils which do not have any more "oiliness" than regular commercial motor oils that it is difficult to make a test with an automobile engine under normal operating conditions to show any possible advantage due to oiliness. However, under certain conditions with certain types of rear axles, oils with "oiliness" are necessary. In our laboratory, "oiliness" tests are made by determining the coefficient of friction of oils using a shaft of hardened steel with a hardened steel bushing, operating at 100 revolutions per minute and gradually increasing the load from zero to 25,000 pounds per square inch if possible. The power required to turn the shaft in the bushing, plotted as beam load in Figure 1, is a measure of the coefficient of friction. With oils which have a viscosity of approximately 90 at 210° F. seizure will occur at about 7,000 pounds per square inch if the lubricants are deficient in "oiliness," but with lubricants which have enough of this quality the bearing will carry the full 25,000 pounds per square inch without seizing. We have been able to prevent seizing with "oily" oils as low in viscosity as 40 at 210° F. although if the oils do not possess this property of "oiliness" seizure on our test machine has occurred in all cases before 25,000 pounds per square inch was reached regardless of the viscosity, even though oils tested varied over the entire range of 40 at 210° F. to 300 at 210° F. This machine may be operated under a number of other conditions to show "oiliness," provided the necessary relations are maintained between viscosity, high load and low speed.

Method of Testing

The device with which we test "oiliness" in our laboratory was developed as the result of some work we were doing on the design of rear axles. It was found under actual service conditions that with a certain design of rear axle, it was possible to cause seizure of the differential pin by getting into deep mud and taking full low gear torque through one wheel with the other wheel stationary. With other designs of rear axles such failure would not occur. In order to study the effects of the different variables in design we operated rear axles in the laboratory, locking one wheel, and taking full low gear torque through the differential. It was found that this test duplicated actual service conditions, and that with a certain design of rear axle and with ordinary rear axle lubricants, we could obtain seizure of the differential pin in a very few minutes. However, with some other lubricants it was possible to operate the rear axle for an hour or more without seizure. Our first "oiliness" tests were made on this rear axle set-up, but since it was rather expensive to ruin a rear axle for each oil test, and since all we could tell about the oil from this test was whether or not it prevented seizure, we developed a bearing test so that the effects of the different variables could be observed.

With this bearing testing machine we retested the oils which we had tested on the rear axle setup and found that the results checked. Since then we have applied this test to many other oils. We consulted with other laboratories where lubricants for rear axles were being tested by operating the different lubricants in the rear axles under definite conditions and we found that in a general way the results in all of our laboratories checked, although there were a few inconsistencies.

It has been our experience that the coefficient of friction and the tendency of a bearing to seize are not of necessity related in any manner, and, therefore, in "oiliness" tests both these properties must be determined. For example, with our machine at 100 revolutions per minute and at loads from 5,000 to 10,000 pounds per square inch lard oil or castor oil will give much lower coefficients of friction than certain special transmission lubricants, consisting largely of mineral oil, but the lard oil or castor oil will permit the bearing to seize at about 13,000 pounds per square inch, while the special transmission lubricants will permit the bearing to operate without seizure at 25,000 pounds per square inch.



Relation of Torque to Applied Pressure

Curve A, mineral oil, vis.,	48 sec.	210°F.
Curve B, mineral oil, vis.,	90 sec.	210°F.
Curve C, mineral oil, vis.,	200 sec.	210°F.
Curve D, lard oil.... vis.,	60 sec.	210°F.
Curve E, castor oil, vis.,	99 sec.	210°F.
Curve F, mineral oil*, vis.,	40 sec.	210°F.
Curve G, mineral oil*, vis.	300 sec.	210°F.
Curve H, commercial fluid grease containing mineral oil and soap ..... vis.,	500 sec.	210°F.
	2500[1] sec.	100°F.
Curve I, commercial fluid grease containing mineral oil soap and sulphur ..... vis.,	90 sec.	210°F.
	1500[1] sec.	100°F.

*Containing sulphur. [1]Viscosity taken under 20 pounds per square inch pressure.

The curves shown in Figure 1 illustrate the type of results obtained with this machine. It is planned to describe this test for "oiliness" in detail in a paper to be presented in the near future.

With transmission lubricants ease of shifting gears in cold weather is a very important property. Preliminary tests seem to indicate that the resistance which a transmission oil or fluid grease offers to gear shifting may be determined by the viscosity of the lubricant at the temperature of shifting. With fluid greases or oils containing waxes, it is possible to avoid the interference of the soaps or waxes in the lubricants by taking the viscosity under pressure. Subcommittee 27, on Transmission Lubricants Classification of the society's Committee D-2 on Petroleum Products and Lubricants is now trying to find whether or not these preliminary tests will be of general application in regard to difficulty in gear shifting.

Stability

Since motors, axles, and transmissions are lubricated by means of a fairly large supply of lubricant which is used over and over again, the question of stability is important. During use the lubricant should not change in composition or properties so greatly as to be unsatisfactory. The change in viscosity with temperature has been mentioned as one change that occurs in service with all oils. The change in gravity, flashpoint, firepoint, volatility and viscosity as a result of fuel dilution are other examples. Sometimes soaps which are added to oils to increase the viscosity or lower the pourpoint lose their ability to produce these effects after the oil has been in use for a short time in the engine, transmission or rear axle. The color of a motor oil changes very rapidly during use, and many other changes in service could be mentioned. Oxidation of motor oils occurs in service and delicate tests to show small differences in resistance to oxidation have been suggested as tests to measure quality.

If the changes which occur in service are such as to interfere with the suitability of the lubricant for the purposes for which it is intended, then tests to measure stability in these respects may be of value in estimating quality, but if the changes are not of this magnitude and the performance of the oil in service is not injured, the net result of the application of stability tests may be to restrict the supply and to increase the cost.

The importance of stability should be interpreted in terms of actual service. We know that although viscosity is recognized as one of the most important properties of an oil for automobile engines, yet under actual service conditions paraffin base oil having a viscosity of 500 at 100° F., which has the reputation of changing less with temperature than other oils, will vary in viscosity from about 65 at 210° F. to about 80,000 at 0° F. When we add the effect of dilution to this temperature effect a further change is experienced. For this particular viscosity, a dilution of 10 per cent at room temperature will decrease the viscosity to about one-half of its original value. Regardless of whether these changes in viscosity are desirable or not, records show that last year in the United States about 26,000,000 automobiles operated with more or less satisfaction using oils of widely different properties.

NEW UNIT STABILIZES CRUDE OIL IN FIELD

(Continued from Page 46)

The surge tank is held at a point near half capacity, the float control actuating the operation of the pump feeding the treating plant. This pump also supplies the knock-back over the towers for the control of the fractionation, as may be seen in the flow chart.

If the heat input from the exchangers and steam coils in the base of the stills proves inadequate, the towers have been equipped with steam inlet lines near their middle section so open steam may be used in the towers. This affords an additional means of control and further emphasizes the extreme flexibility afforded in the operation of the unit.

Treating Plant

The customary procedure of hypochlorite treating is followed out. The accompanying picture shows the arrangement of the mixing tanks, treating tower and accumulator tank. The treating tanks is somewhat unique in as much as the tower is packed with ordinary building tile to break the flow of the gasoline as it passes through the hypochlorite solution. The treating may be carried on continuously, the spent solution being run to the sewer.

The sale of the new product will be handled through the natural gasoline division of the Empire Oil and Refining Co. at Bartlesville.

SIDNEY POWERS WILL HEAD GEOLOGISTS

(Continued from Page 39)

member, to petroleum geology and to science in general."

Doctor Lahee, third vice president in charge of editorial work, reported "no radical changes in editorial work or policy." He stressed the importance of the Bulletin as the representative of the association before the world. The technical programs for the present meeting were in charge of the chairman of the editorial work for the first time instead of local chairmen, he pointed out.

Program in Three Groups

The general technical program of the association proper was divided into three groups of papers, dealing respectively with the Mississippi embayment, general technical subjects and area outside the Mississippi embayment. Dr. F. H. Lahee, third vice president in charge of editorial work, presided at these general technical sessions.

Convention Committees

Convention committees were as follows:

General arrangements—J. Y. Snyder, president; R. S. McFarland, past president; Fred H. Kay, first vice president; A. R. Denison, second vice president; F. H. Lahee, third vice president.

Shreveport committee—M. W. Grimm, chairman; S. P. Borden, W. F. Chisholm, C. M. Dorchester, W. E. Hopper.

Technical program—F. H. Lahee, general chairman; Gulf Coast papers, W. C. Spooner, chairman; A. F. Crider, Phillip S. Justice, Donald J. Munroe, W. Armstrong Price, R. A. Steinmayer; foreign papers, G. C. Gester and W. B. Heroy; geophysical papers, D. C. Barton, chairman.

Reception—R. A. Steinmayer, chair-

man; A. F. Crider, Roy Hazzard, H. V. Howe, W. C. Spooner.

Ladies—Mrs. S. P. Borden, general chairman; Mrs. R. A. Steinmayer, local chairman; Mrs. A. F. Crider, Mrs. H. V. Howe, Mrs. J. Y. Snyder, Mrs. G. R. Stevens

Stunt night on the mighty Mississippi —George R. Stevens, chairman; L. A. Barton, E. H. Finch, L. S. Harlowe, Paul Madden.

Golf—L. A. Barton, chairman; H. C. Ferrell, local chairman; A. F. Crider, F. X. Bostick, F. J. Miller, Louis C. Roberts, Jr., H. G. Schneider, R. A. Steinmayer.

Special side trips—R. A. Steinmayer, chairman; John L. Henning.

Evangeline country trip — G. W. Schneider, chairman; C. C. Clark, A. F. Crider, S. C. Stathers, J. O. Nelson.

Entertainment — Howard S. Greene, director.

Hotels—Seymour Weiss, assistant manager, Roosevelt Hotel.

S.E.P.M. Elect Officers

Officers for the new year elected by the Society of Economic Paleontologists and Mineralogists, which convened in fourth annual meeting here March 21-22 in conjunction with the annual gathering of the American Association of Petroleum Geologists, are as follows:

Dr. J. A. Cushman, head of the Cushman Laboratory for Foraminiferal Research, Sharon, Mass., and lecturer in micropaleontology at Harvard University, president.

C. C. Church, geologist of the Associated Oil Co., San Francisco, vice president.

Dr. Gayle Scott, professor of geology, Texas Christian University, Fort Worth, secretary-treasurer.

Dr. Raymond C. Moore, Kansas state geologist and head of the department of geology, University of Kansas, Lawrence, Kans., editor.

Dr. Marcus A. Hanna, geologist of the Gulf Production Co., Houston, who presided at the sessions of the society, will, as retiring president, remain a member, with the new officers named, of the executive council.

The society was officially designated as a section of the American Association of Petroleum Geologists at the annual business session of the latter organization and the issuance of a charter as such by the executive committee was authorized.

Technical sessions of the society, held in the Roosevelt Hotel, were featured by presentation of papers on a wide variety of subjects.

7,000,000 GALLONS IN 1929 FROM DEEP WELL

(Continued from Page 137)

large percentage of the gas contracts, an extensive drilling campaign is being conducted for deep sand production. Wells recently completed in this part of the field upon which the company has gas contracts have come in flowing from 1,500 to 2,500 bbls. of oil with from 2,000,000 to 5,000,000 feet of 2-gallon gas.

"Natural gasoline production during 1929, amounted to 39,676,635 gallons as compared to 34,108,261 gallons produced in 1928, or an increase of over 15 per cent.

"The company's eight natural gasoline plants maintained a daily average during 1929 of 110,000 gallons from its properties under lease in both California and the Mid-Continent."

JOSEYS BUY MELAT PRODUCTION

FORT WORTH, Tex., Mar. 24.—W. C. Josey and his sons, C. W. Josey and D. W. Josey, have purchased the Wilbarger County production of the Melat Oil Co. for $120,000. The property purchased from the Melat company consists of 200 acres in the Melat Pool near the Rock Crossing Pool and out of the Waggoner ranch. It has nine wells producing 175 to 180 bbls. settled production. The company also has interests in Archer and Young Counties.

AMENDMENT FOR CRUDE COST INQUIRY ADDED TO TARIFF BILL BY SENATE

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Mar. 23.—The latest effort to obtain a tariff on oil was made Saturday when Senator Thomas of Oklahoma offered an amendment to remove oil from the free list which he said would place it under paragraph 1,558 which would place a 10 per cent duty upon the raw products which would be crude and a 20 per cent duty on refined products which would be gasoline. He did this, it was said, because he had heard that the Royal Dutch-Shell is advertising for a $40,000,000 loan to be subscribed by the people of the United States. This amendment was rejected 33 to 45. Senator Thomas then offered the following amendment which without debate was agreed to:

"The tariff commission is hereby directed, within eight months from the passage of this act, to ascertain the approximate average cost per barrel to the oil refineries located on the Atlantic Seaboard of crude petroleum delivered to them from the oil fields of the United States during the three years preceding 1930, and the present approximate average cost per barrel of crude petroleum from Lake Maracaibo, Venezuela, delivered to the same points. Such relative costs shall be immediately certified to the Speaker of the House of Representatives and to the President of the Senate for the information of the Congress."

The senator said he offered this amendment because he asked for this information from the Treasury Department two weeks ago and no attention had been paid to his request.

Vote on Thomas Amendment

During the night session of March 19, the Senate rejected two attempts to secure a tariff on oil. It defeated by a vote of 38 to 29 an amendment by Senator Thomas for a tariff of $1 a barrel on crude petroleum and 50 per cent ad valorem on petroleum products. A second amendment for rates of 50 cents and 25 per cent, respectively, was offered by Senator Pine of Oklahoma, and rejected, 32 to 28.

The vote on the Thomas amendment was as follows:

Ayes—29

Republicans (21): Allen, Baird, Capper, Fess, Goff, Goldsborough, Hastings, Hatfield, Hebert, Johnson, Jones, Kean, McCulloch, Moses, Oddie, Phipps, Pine, Robison, Shortridge, Steiwer, Waterman.

Democrats (8): Bratton, Broussard, Connally, Kendrick, Pittman, Ransdell, Sheppard, Thomas of Oklahoma.

Nays—38

Republicans (18): Blaine, Borah, Couzens, Frazier, Hale, Howell, Keyes, La Follette, McMaster, Metcalf, Norbeck, Norris, Nye, Robinson of Indiana, Schall, Smoot, Vandenberg, Walcott.

Democrats (20): Ashurst, Barkley, Black, Blease, Copeland, Fletcher, George, Harris, Hawes, Hayden, Heflin, Overman, Simmons, Steck, Swanson, Trammell, Wagner, Walsh of Massachusetts, Walsh of Montana, Wheeler.

Paired: For the amendment—Republicans: Glenn, Cutting, Bingham, McNary, Thomas of Idaho, Townsend, Watson, Sullivan, Grundy. Democrat: Caraway:

Against the amendment—Republicans: Green, Brookhart. Democrats Glass, Harrison, McKellar, Smith, Stephens, Tydings, Brock. Farmer-Labor: Shipstead.

Not voting: Dale, Patterson, Gould, Reed, Deneen, Gillett. Republicans: Dill, King, Robinson of Arkansas.

Senators Hale (Republican), of Maine, and Keyes (Republican), of New Hampshire, voted against the Thomas amendment and for the Pine amendment.

Senator Thomas' amendment in addition to providing a tariff on petroleum and its products provided that the funds derived from the tariff thus levied, should be covered into a special fund for appropriation and expenditure by the Secretary of Agriculture under the Federal Highway Aid Act and also that the United States Tariff Commission should be authorized and directed to make an investigation of the entire petroleum industry, "to the end that the tariff rates provided in the paragraph may be increased or decreased as the facts develop may warrant and justify."

Later Senator Pittman of Nevada offered an amendment to this amendment making the duty on crude petroleum or fuel petroleum inoperative when Texas and Oklahoma crude of a gravity of 36 degrees Baume should be in excess of $2 per barrel at the place of production and providing that no duty should be collected upon petroleum products when unmixed standard gasoline in New York City should be in excess of 20 cents per gallon, exclusive of gasoline tax.

Senator Thomas asked for modification of his amendment to conform to the changes suggested by the senator from Nevada.

It was in this amended form that the amendment was rejected although it was supposed that by limiting the price at which crude oil could go in Oklahoma and Texas and the price at which gasoline could be sold in New York City would do much to gain additional votes.

Vote on Pine Amendment

Senator Pine on Friday proposed a new amendment to the tariff bill providing for a duty of 40 cents a barrel on crude oil and 20 per cent ad valorem on products of petroleum. The Senate rejected the proposition by a vote of 38 to 37, the largest vote on any tariff on oil that has been proposed.

The vote on the Pine amendment was:

Ayes—37

Republicans (28): Allen, Bingham, Capper, Fess, Goff, Goldsborough, Grundy, Hale, Hastings, Hatfield, Hebert, Johnson, Jones, Kean, Keyes, McCulloch, McNary, Moses, Oddie, Patterson, Phipps, Pine, Robsion, Shortridge, Steiwer, Sullivan, Walcott, Waterman.

Democrats (9): Bratton, Broussard, Caraway, Connally, Kendrick, Pittman, Ransdell, Sheppard, Thomas of Oklahoma.

Nays—38

Republicans (17): Blaine, Borah, Brookhart, Couzens, Frazier, Greene, Howell, La Fallotte, McMaster, Metcalf, Norbeck, Norris, Nye, Robinson of Indiana, Schall, Smoot, Vandenberg.

Democrats (21): Ashurst, Barkley, Black, Copeland, Fletcher, George, Glass, Harris, Harrison, Hawes, Hayden, Heflin, Overman, Simmons, Steck, Swanson, Trammell, Tydings, Wagner, Walsh of Massachusetts, Walsh of Montana.

Paired—16

For the amendment: Cutting, Glenn, Reed, Thomas of Idaho, Watson (Republican).

Against the amendment: Stephens, Robinson of Arkansas, Wheeler, Smith (Democrat); Shipstead (Farmer-Labor).

Paired without announcement: Baird and Brock; Gillett and Deneen; Townsend and McKellar.

Not Voting—5

Blease, Dale, Dill, Gould, King.

Senators who voted against the oil tariff March 19 and for the Pine amendment were Hale, Keyes and Walcott.

Wirt Franklin and other delegates from Oklahoma have returned to their homes and will shortly hold a meeting of the Petroleum Producers Association to decide upon future action. Mr. Franklin on leaving said he proposed to continue a campaign of education in favor of an oil tariff.

While here looking after tariff legislation for oil Joseph Irwin Cromwell, president of the Cromwell-Franklin Oil Co., purchased a newly completed office building in the heart of the financial district for $3,750,000 stating it was the first major real estate purchase he had ever made.

COURT NAMES GAS-OIL RATIO COMMITTEE

(Continued from Page 38)

injunction. 'Gas oil ratio' as used in this order is the proportion which the total number of cubic feet of gas bears to the total number of barrels of oil produced from the same well at the same time. A 'barrel of oil' as used herein contained 42 liquid gallons of clean oil. A 'cubic foot of gas' as referred to herein is measured at a temperature of 60° F. and a pressure of 14.733 pounds per square inch."

Schedule showing potential daily production of operators at Santa Fe Springs on March 15, and amount of gas allowed to be produced by court:

Operator—	Potential daily oil prod.	Allowable gas prod. in MCF
E. K. Allison Synd.	705	846
Associated Oil Co.	8,374	10,048
Bardeen, H. A.	2,148	2,578
Barnhart Morrow	767	920
Bellview Oil Synd.	3,544	4,253
Buckeye Union	479	575
Cypress Pet. Co.	587	704
Donley Land	133	160
Elmer Oil Co.	228	274
Ethyl Oil Co.	350	420
General Petroleum	59,427	71,312
Getty, Geo. F.	13,733	22,681
Howard, Oscar	960	1,152
Italo Petroleum	964	1,156
Jameson Petroleum	336	403
Kyle, W. S.	142	170
Macmillan, H. R.	210	252
McKeon Oil Co.	1,598	1,918
Mendota Petroleum	149	179
Mohawk Petroleum	340	1,128
Pargellis, W. F.	152	182
Richfield Oil Co.	5,076	6,091
Ring Oil Co.	211	253
Rio Grande	620	744
Rohde Oil Synd. No. 1	401	481
Rohde Oil Synd. No. 5	1,468	1,762
Santa Fe Springs Synd.	72	86
Shell Oil Co.	14,080	16,896
S. P. Land Co.	279	335
St. Helens Pet.	266	319
Standard Oil Co.	13,982	16,778
Star Petroleum	2,694	3,882
Sunset Pacific	472	566
Superior Oil Co.	5,050	8,340
The Texas Company	22,000	26,400
Twin Bell Synd. No. 1	286	343
Twin Bell Synd. No. 2	1,934	3,194
Union Oil Co.	48,323	57,987
Universal Consolidated	3,639	4,367
York & Smullin	311	373
Wilshire Oil Group	20,332	24,398
Total	237,422	294,906

Committee Named by Court

In order to establish an equitable gas-oil ratio and apportion the ratio to each leasehold in the Santa Fe Springs Field Judge Hazlett appointed a committee of three technical men to assist the court in determining this basis upon which to predicate future enforcement work. This committee which consists of Ralph Arnold, consulting geologist and independent operator; Joseph Jensen, chief petroleum engineer of the Associated Oil Co., and Frank E. O'Neil, chief petroleum engineer of the Superior Oil Co., has already gone to work in an effort to work out an equitable method of operation. The duties of the technical committee will be to examine the general situation at Santa Fe Springs, particularly with reference to conditions of each leasehold and report back to Judge Hazlett within 15 days. From then on they will act as expert witnesses for the court in any hearings that may come up in connection with the temporary injunction now in force.

It goes without saying that the committee's chief duty will be to recommend the proper gas-oil ratio to be incorporated in the permanent injunction which will come up for hearing before Judge Hazlett on June 16. It is the consensus that the court could not have appointed a more competent engineering committee as all three technicians are recognized as among the leaders in their profession.

COSDEN IN ILLINOIS

CHICAGO, Mar., 22.—The Cosden Oil Co., (Ill.) has taken over and is now operating the jobbing concern which has been known as the United Petroleum Co. It is stated that the Cosden Oil Co., (Ill.) will build bulk storage for 2,000,000 gallons of gasoline in the very near future.

COMPLETE NEGOTIATIONS FOR REFINERY IN JAPAN

(Continued from Page 138)

by the Associated from its California production.

The Mitsubishi Goshi Kaisha (Mitsubishi Holding Co.), with a capital of 120,000,000 yen and headed by Baron Koyata Iwasaki, is one of the most powerful and influential concerns of Japan. Through its many subsidiaries, it is engaged in all of the principal industrial activities of the empire, including mining, ship building, banking, importing and exporting, shipping, insurance, etc.

For many years the Mitsubishi Shoji Kaisha, a subsidiary of the parent Mitsubishi company, has acted as distributor of Associated products in Japan and through the friendly relations thus established the new project was evolved.

SELECTING CAPABLE EMPLOYES IMPORTANT

(Continued from Page 137)

mum and 40 years as a maximum would be safe.

Education Important

Education is a very important point to be considered. In hiring men as oilers, boilerhouse men, leading men, yard men, etc., too much education is a handicap to the organization. It would be almost impossible to have a full crew of college graduates, and to have one or two college men working with several grade school men does not work so well because the college men feel superior to the grade school men, and the grade school men are just a little envious or jealous of the man with a college education, which will cause conflict. These little things make or break co-operation. Judging from my experience, I would say education from the eighth grade to high school graduates are the most adaptable. With less than eighth grade there is not enough ground work for the best results in home study, but there are shining examples of home study and experience turning out good men, who have not had the advantages of even an eighth grade education.

A good idea of how much education a man has can be obtained from a written application. Something can be learned from a signature. It is a very easy matter in taking the information that a man gives when he is applying for a job to have him sign his name under the information, and when a man is applying for a job is the time to get quite a lot of information, if the man is handled right. He will tell you everything, because if he is in earnest about wanting the job he is trying to make a good impression on you and will express his opinion on most anything that is mentioned.

Physique is important in that a man of average physique is not noticeable, and not so apt to ridicule. A very small man is known as a "runt" and an extra big man is known as "Big boy," which could lead to conflict, while in an average sized crew these little points will be eliminated.

So much for the consideration of applicants. Now we will assume that we have hired an average sized man of about 25 years who is in average good health with a healthy family of wife and one or more kiddies, we will start him to work.

Breaking In

After the man is employed great care should be taken while breaking him in. His first month's experience impresses him more than any other time. If he is taught loyalty, which is the keynote of a good organization, he will be loyal, but if he sees that the man in charge and the older men on the job are "just getting by" then that is the attitude that he will take.

There should be one competent man appointed to take charge of the new man for the first day or two that he is on the job, provided that the supervisor can not spare the time to be with him, which would be better. After his first day he should be given certain duties to perform, but from this time on, it should be emphasized that no matter how trivial the duty, it must be done right. No carelessness will be tolerated. Plenty of time should be taken in explaining every detail of his work, as the time goes on, and patience should be exercised. After he becomes thoroughly familiar with his duties he should be told that he will work more or less on schedule, certain times to do certain things.

He should be given the schedule that was used by the man who preceded him in his job, but he should be allowed to make minor changes in the schedule that he wants to make, provided that his changes will not conflict with other men's schedule and work. That is, he will have to do the same things that the man before him did, to a certain extent, but if he would rather arrange his work differently, he should be allowed to do it. He will take it as a great privilege to be allowed to change the work around some, which is a trait of human nature. These schedules are a habit to be formed. We live our lives doing things that become habits with us. We form new habits continually. Working by schedule is a good habit.

After the man becomes familiar enough with the immediate duties that he is to perform, he should be encouraged to study the next job ahead of him, and at the time that he is learning the next bigger job, if encouraged and taught correctly, he will get the feeling of being essential to the organization, which is a very good way to have him feel, provided that he does not get the idea that the organization could not go without him. This trait is very common and should be watched for and stopped at the very beginning. If it cannot be stopped this is a very good time to cull him out, but if handled right will prove an asset to the organization.

Men like to have the many problems encountered in the daily work, discussed with the boss. So when around the men it is a good thing to mention problems encountered, so that the man can study it out for himself, then when it comes convenient this certain problem can be mentioned to him again, and his solution obtained. If his solution is not correct he should be corrected by showing him why he came to the wrong conclusion. Discussing operating problems with the men as a crowd is a good way to have them talked on the job, which is a benefit to the men because then they get each others' idea.

We have a meeting of all the men of the crew about once each month, and if there is a new man on the job one of the crew is delegated to answer all of his questions. It is interesting to see some of the older men explaining the general principles of oil distillation or something else that the new man does not understand. It is also instructive for the older men to have to talk, even to a small bunch of men. We are all as eager to learn something new as we were when we were going to school, and as interested if there is no danger of being ridiculed as a "Numb Skull" or some such name. We do not have any ridicule on our job.

Maintaining Enthusiasm

After the new man becomes, as he thinks, an "old head" on the job, it becomes quite a problem to keep him in good spirits and enthused. Then is the time that the man looks to his superior for an example. If the supervisor is enthused, likes his job and expresses himself as liking his job, liking his superiors and his company, it has its effect upon the men. There are times when men want to confide their troubles to someone, and if the supervisor has always invited confidences, and respected them as confidences, he is the man that will be called upon to solve these intimate problems that all men have at certain times. In helping his men solve their problems he should not take the attitude of being the man in authority but as the confidential friend. He should use tact and not express his opinion on the subject until he has learned all that he is to know about it, then usually all that is needed is a few words of encouragement.

We do not have many set rules. Our company does not believe that rules are the way to run the job. We do not believe rules will get the best results, either. Men are taught the right way to perform their many duties and the bad effects that certain things will cause if done and leave it to the men to see that they make their job as easy as it can be made and as pleasant.

To sum up all the above statements it is to practice the golden rule, be loyal and teach loyalty, and then when a man is chosen from the men in your care, he will at least have the groundwork of making the company a good man.

A.P.I. EASTERN DIVISION TO MEET AT PITTSBURGH

The eastern district, American Petroleum Institute, Division of Production, will hold an all-day conference in the Blue Room, seventeenth floor, William Penn Hotel, Pittsburgh, Pa., Monday, April 7. The program follows:

Morning session—9:30 a.m.

"Storing of Gas (Natural and Artificial), in Old Oil and Gas Fields," by S. W. Meals, president, Carnegie Natural Gas Co., Pittsburgh, Pa. Discussion by George E. Welker, president, United Natural Gas Co., Oil City, Pa., and J. H. Newlon, geologist, Philadelphia Co., Pittsburgh, Pa., and others.

"Core Studies," by Eugene A. Stephenson and H. K. Ihrig, associated with R. E. Davis, consulting engineer, Pittsburgh, Pa. Discussion by Dr. Charles R. Fetke, Carnegie Institute of Technology, Pittsburgh, Pa.; Richard D. Mayne, student, Carnegie Institute of Technology, Pittsburgh, Pa.; Paul D. Torrey, consulting geologist, Bradford, Pa.; and I. I. Gardescu, University of Pittsburgh, Pittsburgh, Pa.

Luncheon—12:30 p.m.

Afternoon session—1:30 p.m.

"Oil and Gas Reserves," by H. R. Pierce, associated with Dunn & Lewis, Pittsburgh, Pa. Discussion by Dr. R. E. Somers, geologist, Gulf Oil Co., Pittsburgh, Pa.; Sylvester Rynearson, student, University of Pittsburgh, Pittsburgh, Pa.; and Clark F. Barb, assistant professor of petroleum research, Pennsylvania State College, State College, Pa.

"Economical Operation of Small Oil Wells," by P. H. Curry, vice president, South Penn Oil Co., Pitsburgh, Pa. Discussion by James H. Dye, sales manager, International Derrick & Supply Co., Pittsburgh, Pa., and others.

"Economical Operation of Small Gas Wells," by H. H. Phillips, T. W. Phillips Gas & Oil Co., Butler, Pa. Discussion by George Whitmer, III, American Natural Gas Co., Pittsburgh, Pa., and J. B. Bole, Leechburg Gas Co., Leechburg, Pa., and others.

The officers of the eastern division are: E. L. Estabrook, chairman, Pan American Petroleum & Transport Co.; J. French Robinson, vice chairman, Peoples Natural Gas Co.; Gordon N. Campbell, vice chairman, Swiss Oil Corp.; John C. Askam, vice chairman, Ohio Oil Co.; and H. H. Hill, secretary, Standard Oil Development Co.

DRASTIC CUTS CAUSED BY RATE COMPETITION

(Continued from Page 48)

from 21 cents to 17 cents in several sections at Portland and Seattle and within the past few days reports indicate that the retail price in Sacramento, Calif., has declined from 21 cents to 17 cents. This price cutting has been precipitated in a good many instances by service station operators who are sacrificing a portion of their 4-cent differential and thus ultimately involve the refiners. It remains to be seen just how far the present price cutting campaign will go and whether it will in the end force major refiners ultimately to cut tank wagon prices.

To the casual observer it would seem that the present increase in crude oil prices would establish a limit beyond which independent refiners could not survive indefinitely. The present so-called gas war is hurting a number of refiners especially those that purchase a large part of their crude oil supply. The larger companies which produce at least half of their crude oil runs to stills are in a much more favorable position as a 25-cent raise in crude prices affects only a portion of their crude runs.

Another Crude Raise?

The present situation is unusually interesting because it is not beyond the realms of possibility that another increase in crude oil prices may materialize in the near future if state production is reduced by enforcement of the gas conservation law. Heretofore producers of crude oil have not enjoyed a price commensurate with the intrinsic value of raw material but it looks as though their day is coming. It is the general opinion that the present highly competitive condition existing in the marketing angle will correct itself within the next 60 or 90 days due to the restriction of crude oil production. The chief stumbling block to stabilization in the past has been the wide spread between the price of crude oil and tank wagon price of gasoline together with the chronic overproduction during the past few years. This wide spread has encouraged the erection of new refineries and numerous service stations on the assumption that there must be considerable profit in the refining and marketing of crude and refined oils. This is true to a certain extent as far as well balanced companies are concerned but in many instances works the other way when one has to buy crude oil and pay a bonus above the posted price.

ADDITIONAL GAINS IN GROUP 3 MARKET

(Continued from Page 36)

not be offset by higher crude oil prices. It is due to this situation that one operator in this group has recommended that refiners "make haste slowly" in advancing their gasoline prices at their plants. This operator believes that it will be better for all concerned if crude oil prices are left at their present levels with only small advances in gasoline tank car prices until May or June when the summer demand will be under way.

Large Refiners

The position just outlined probably represents the viewpoint of the minority so far as total refinery capacity in Oklahoma and the Mid-Continent is concerned. The expansion of several Mid-Continent companies in the production of crude oil and in retail marketing has materially changed their position as regards the desirability of higher crude oil prices. In general, their position is similar to that of the major units who look to posted crude oil prices and tank wagon and retail prices on gasoline and other products rather than tank car prices, to reflect improvement in markets.

These operators will welcome a return to higher crude oil and gasoline tank wagon prices. Several of the larger refiners in Oklahoma produce crude oil in excess of their own refinery requirements and they market the bulk of their gasoline and kerosene output either through their own stations or through contracts with jobers which are in part based on the posted tank wagon and service station prices. Many of the newer contracts between jobber and refiners have guaranteed the former a margin of 5½ to 6 cents under the service station prices in the Middle West. For that reason it will be necessary for tank wagon and service station prices to advance before these refiners can share in any improvement in the tank car market situation.

Gasoline and Naphtha

The advance in gasoline prices generally came from the refiners who have been quoting the lowest prices. A few refiners who were selling U. S. Motor gasoline as low as 5½ cents early in March have steadily advanced their quotations so that on Tuesday 6¼ cents appeared to be the low of the market for specification material. Several of the larger refiners who have never quoted under 6½ cents were still quoting that price on Tuesday. It was predicted that

the quotations of these companies would be boosted to 6¾ cents and possibly 7 cents before the end of the week.

Some U. S. Motor gasoline and other grades which were sold to resellers early in the month for March delivery at low prices was being offered to jobbers for immediate shipment. It is not believed that the volume of this material is large enough to depress the market.

There have been offers in the market for April delivery and some business has been closed. Early in March a U. S. Motor sale at 6 cents for April delivery was viewed with favor by several refiners and sales were made at that figure. Other April sales have ranged as high as 6½ cents with a majority of the sellers refusing to speculate on next month's business.

Prices have also advanced on the higher gravities. A price of 6½ cents was low on the 60-62 400 endpoint grade, 6¾ cents on 64-66 390, and 7¼ cents on 64-66 375. Many refiners were quoting one-quarter to one-half cent above these prices.

The high gravity market is largely dependent on the action of the exporters. If they continue their monthly Mid-Continent purchases of approximately 15,000,000 gallons in April, the high gravity grades should be in a position to reflect any improvement in the U. S. Motor grade. If the export orders fail to materialize, it will be necessary for refiners to curtail their output of the 390 and 375 endpoint grades with a corresponding increase in the production of U. S. Motor and other domestic grades.

Kerosene

Specification grades of 41-43 water white kerosene were selling at 4¼ to 4½ cents the first of the week. The domestic demand continues to improve and some export business has been placed. Although no rapid upturn is predicted due to the adequate supplies available most of the trade feels that prices will advance an additional one-quarter to one-half cent before the spring demand reaches its peak.

Distillates

Furnace oil distillates as previously indicated are fractionally stronger. A 38-40 straw grade of low cold test and a flash around 175 which was weak at 3 cents the first of the month brought 3⅛ cents last week with a price range up to 3⅜ cents. In addition to the smaller supply, cold weather in the northern states has aided the demand. Jobbers have asked for immediate shipment to take care of their retail business over the remainder of the season which does not close in many states until the end of April.

Fuel Oil and Gas Oil

The half dozen refiners in Oklahoma who rely on the spot market to take their fuel oil output have had to contend with low prices coming from several sellers in other areas. In Oklahoma some low cold test material with a gravity as high as 22 has been sold as low as 62½ cents but the general low of the market is 5 cents above that figure. Refiners who have regular customers are generally getting from 70 to 80 cents for commercial grades under 24 gravity. The higher gravities are moving slowly and price ranges are wide.

Gas oils are stronger than they were a week ago. The furnace oil demand had aided the better grades and refiners are willing to pay around 2¾ cents for grades suitable for cracking stock. The industrial grades are not so active but prices were firm during the past week.

Natural Gasoline

Natural gasoline prices were moving upward with the refinery grades and in the opinion of the sellers at least they are in a position to continue this trend. Grade AA was strong at 5⅝ cents on Tuesday with a few sales reported at 5¾ cents. Grade BB, the other active grade, was selling at 4¾ cents. Grade A was selling at 5¾ cents, Grade B at 5 cents and Grade C at 4¾ cents.

The demand for natural gasoline has been steady throughout March and has absorbed the output. The proration agreements in the producing fields has lowered the output of a number of manufacturers and they have been compelled to buy from other manufacturers in order to complete their March orders. The outlook for April is favorable from the demand side and predictions of 6-cent Grade AA for the start of April are heard in the trade.

Wax

Petroleum wax is probably the least active product on the Oklahoma refinery list. Quotations of 2½ and 2⅝ cents are bringing little business and export buyers are quoting at Gulf Coast prices which would net the Oklahoma refiner around 2¼ cents.

SOCONY-VACUUM TEST BEGUN BY GOVERNMENT

WASHINGTON, D. C., Mar. 24.—The Department of Justice today took the first step to test the legality of the proposed merger of the Vacuum Oil Co. and the Standard Oil Co. of New York by filing in the District Court at St. Louis a petition asking that the proposed merger be declared illegal. The papers filed recite the legal history of the old Standard Oil case which ended with a final decree in 1911, and the petition as filed in that case.

The Government asserts that the two companies, the Standard of New York and Vacuum, have been and are engaged in substantial competition with each other, and also that they are potentially competitive with each other in interstate commerce. The petition asserts that by the terms of the decree in the original case the court adjudged that these defendants with others had been engaged in a conspiracy in restraint of trade. It quotes Section 6 of that decree which enjoined all of the defendants, including the Vacuum and the Standard Oil of New York, from entering into any similar combination in restraint of trade, and alleges that the proposed merger would constitute a violation of the express and literal terms of the decree. The Government asks that the contract for the proposed merger be declared by the court to be in violation of the decree, that it be declared void, and that the Vacuum and Standard companies involved, with all of their employes, be enjoined from proceeding further with the merger.

It is the intention of the Government to bring the case on for a speedy trial as soon as the defendants have filed their answers. All the legal proceedings will be conducted in the District Court for the Eastern District of Missouri for the reason that the original suit was tried and the original decree entered in that court.

GULF COAST MARKET

HOUSTON, Tex., Mar. 25.—A continued firm pale and red oil price structure featured the Gulf Coast refinery market the past week. Movement of all grades has improved but chiefly an increasing amount of business in the heavier viscosity oils. The stronger market was reflected in a sharp increase in the amount of material moved out on contract, which also indicated that many buyers had been holding off previously in filling their contracts until they felt the market was on bottom.

Sellers point out that many jobbers have depleted their storage to a minimum and now are attempting to replace this before further increases in prices and before their spring and summer requirements show further gains.

Little change was indicated in other products during the week. Prices on all products were steady.

PREPARE TANKER SHIPMENTS

CHICAGO, Mar., 22.—The Empire Oil & Refining Co. at East Chicago, is preparing for the loading of tank ships at its new refinery. A contract has been let for the building of a loading dock 600 feet in length, the contract stipulating that the dock must be ready for operation by May 1.

Late Fields

(Continued from Page 48)

hours, and extended production to the south a quarter mile, in the Voshell Pool. The Simpson sand was found at 3,388-95 feet. It is the first test to find oil in Section 16-21-3w.

Skelly Oil Co.'s No. 1 Temple, SW cor. NE Section 13-34-15w, a wildcat in Barber County, has the Viola at 5,241-46 feet, with approximately 2,000,000 feet, of gas and a showing of oil. The cement plugs are being drilled and the gas was showing while the work was in progress.

OKLAHOMA

The production from the Oklahoma City Pool for the 24 hours ending Tuesday morning, March 25, was 51,794 bbls. from 28 wells.

Coline Oil Co.'s No. 7 Warren, NE cor. SW SW, Section 18-11-2w, on the northeast edge of the Oklahoma City Field, blew in making 100,000,000 feet of gas from a total depth of 6,350 feet, with the drill stem still in the hole.

Tom Slick Oil Co.'s No. 3 Hoopes, SE cor. SW NE, Section 31-11-2w, on the south side of the pool, unexpectedly blew in, estimated at 125,000,000 feet of gas and a showing of oil. The oil and gas was found in sand at 6,616-19 feet.

Indian Territory Illuminating Oil Co.'s No. 2 Emerson-Joyce, NW cor. NE NE, Section 25-11-3w, an old producer, was being drilled deeper at 6,830 feet. The test is a southwest offset to the discovery well in the Oklahoma City Pool. Same company's discovery well in the pool, C SE SE, Section 24-11-3w, made 635 bbls. of oil and 5,240 bbls. of water in 24 hours on the gas lift.

Wells expecting to make a production test in the next few days are the Indian Territory Illuminating Oil Co.'s No. 1 Theimer, NW cor. SW NE, Section 12-11-3w, which was opened for 20 minutes and made 80 bbls., and another time for 15 minutes and made 65 bbls. The total depth was 6,360 feet. The Sinclair Oil & Gas Co. and Amerada Petroleum Corp.'s No. 7 Kinter, SW cor. SE SE, Section 30-11-2w, was bailing in at a total depth of 6,392 feet, and No. 8 Kinter, SE cor., Section 30-11-2w, was also bailing in at a total depth of 6,410 feet.

The Konawa Pool made 8,803 bbls. from 26 wells on the gauge of March 25. Two new wells were added to the pool. Champlin Oil & Refining Co.'s No. 4 Sachemeche, NW cor. SE SW, Section 9-6-6, was plugged back from 3,050 feet to 3,039 feet, where it swabbed 91 bbls. of oil and 16 bbls. of water. Empire Oil & Refining Co.'s No. 4 Sachemeche, NE cor. NW SW, Section 9-6-6, flowed 400 bbls. in 18 hours, with 50 pounds back pressure, from sand at 2,925-41 feet.

Argus Production Co. has announced a new wildcat location in Texas County, in the Oklahoma Panhandle. The location is in Section 23-6-14, Texas County, and is the first of a series of tests the company expects to start in the county in the near future.

Garland and others' No. 1 School Land, NE cor., Section 13-6-7, a 2½-acre piece in the Sasakwa Pool, flowed 1,926 bbls. in 24 hours from the Wilcox sand at 4,168-72 feet.

SHREVEPORT MARKET ADVANCES

SHREVEPORT, La., Mar. 25.—An advance in gasoline prices in this territory anticipated last week materialized today when a raise of a quarter cent took effect on U. S. Motor, making it 7 cents. One refiner, however, was still quoting 6¾ cents. There seems to be some division of opinion as to an advance in tank wagon, and consequently filling station prices as a result.

Opinion negative to an advance is predicted upon the existing state of affairs in which it is shown such prices at some points in the area are actually below the cost of delivery, which opinion insists that prices be equalized before an advance is possible. For instance, figures were submitted to show that in one point where the tank wagon price is 7½ cents, it costs 12½ cents, including taxes, inspection fees, etc., to deliver the product to the pump.

A. T. FANCHER DIES ON TRAIN EN ROUTE HOME

SALAMANCA, N. Y., Mar. 22.—Albert T. Fancher, 71, prominent oil man, chariman of the Allegany Park Commission, vice chairman Seventh New York State Park Commission, and former state senator, died suddenly aboard a train at Charleston, S. C., at 5 o'clock yesterday afternoon while on his way to his home in Salamanca from Florida, where he had spent the winter. He had been in ill health the past three years.

Mr. Fancher was one of the pioneers in the Oklahoma oil fields, where he made several rich strikes, finally selling a large part of his holdings to the Prairie Oil & Gas Co., Standard interests. Later he again became interested in western oil developments, as well as nearer home. At the time of his death he was president and manager of the Finance Oil Co., engaged in operations in Osage County, Oklahoma; president and manager of the Reservation Gas Co., engaged in operations near Gowanda, N. Y., and president and treasurer of the Livingston Oil & Gas Co., operating in Oregon. He also was interested in Salamanca concerns, and was president of the Fancher Furniture Co., operating a factory here; a director of the Luminite Products Corp. and of Salamanca Trust Co.

THINKS THE VAN POOL MAY EXCEED MEXIA

(Continued from Page 145)

mately $1,950,000 after provision for Federal taxes, but before interest on the notes and dividends on preferred stock, both of which were retired during the closing quarter of last year. Such earnings for 1929 approximated $4.70 a share on the 413,000 shares outstanding at the end of the year, compared with $2.78 a share in the previous year.

Simms Petroleum

Report of Simms Petroleum Co. and subsidiaries for year ended December 31, 1929, shows net profit of $2,328,802 after interest, depreciation, depletion, etc., equivalent to $2.79 a share (par $10) on 835,362 shares of stock. This compares with $334,064, or 41 cents a share on 806,038 shares, in 1928.

Indiana Pipe Line

Indiana Pipe Line Co. declared the usual extra dividend of 25 cents and the regular quarterly dividend of 50 cents, both payable May 15 to stock of record April 25.

CHANGES IN PERSONNEL

NEW YORK, Mar., 24.—Changes in committee personnel have been announced by W. W. Fondren, Humble Oil & Refining Co., national chairman of the American Petroleum Institute committee on standardization of rigs and derricks. W. H. Meier, Atlantic Oil Producing Co., Dallas, Tex., has been appointed national secretary and chairman of the engineering subcommittee. He succeeds R. G. Hamaker, Reed Roller Bit Co., Houston, Tex., who has resigned after having rendered conspicuous service and participating in the work of the committee since its inception. P. L. Blodgett, Richfield Oil Co. of California, Los Angeles, has been appointed chairman of the California district subcommittee in place of the late J. J. Hern.

K. N. Santjian, The Texas Company, Los Angeles, Calif., and Samuel McIntyre, Chanslor-Canfield Midway Oil Co., Torrance, Calif., have been made members of the California district subcommittee. H. M. Harris, Humble Oil & Refining Co., Houston, Tex., has been made a member of the engineering subcommittee. E. R. Ames, Texas Creosoting Co., Orange, Tex., and A. C. Horner, National Lumber Manufacturers Association, San Francisco, Calif., have been made members of the subcommittee.

TWELFTH PRODUCER IN VAN POOL MAKES 325 BBLS. INITIAL, CHOKED

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Mar. 24.—One more well was added to the list of producers in the Van Pool, Van Zandt County, this week, when Pure Oil Co. completed No. 1 Clark, 645 feet from the north line and 105 feet from the east line of Clark's 63.3-acre tract in the John Walling Survey, on the eastern side of the field. Top of the pay may be called 2,770 feet where the well had a fair saturation, and total depth is 2,880 feet. Initial production of this, the twelfth producer of the field, was 325 bbls., choked. Only 11 of the 12 are now on production.

Pure Oil Co.'s No. 1 Crim, the western edge well which has been in process of completion for three weeks, and promising a small producer, is now shut down at 3,082 feet to set a liner and make a test. The outcome is still doubtful, but it is sure of making some kind of a small producer.

One of the most interesting tests is the West Texas Royalty Co.'s No. 1 Negro Orphanage in the C. E. Rivers Survey, just south of the town of Mineola in Wood County. The test registered an oil showing this week in the Navarro at 1,847 feet, and is now drilling at 2,270 feet.

One area in East Central Texas near the town of LaRue in Henderson County has seen possibly the hottest play since the discovery of the Van Pool, and lease and royalty prices in this area were exceedingly high due to the Shell Petroleum Corp. core drilling its block, and much geological and geophysical work being done in the area. Shell moved in a derrick and started rigging up when word was received to dismantle the rig, and move off the material. This came as a big surprise to many who are holding near-by acreage and royalty, for it is not known what is to be done with the block. Faulty titles have been named as the cause of Shell's actions.

Nine new locations were reported for the Van Pool this week, the Pure Oil Co. staking all nine. It now begins to appear as if the 10-inch line which is being constructed by the Pure Oil Co. to its Smith Bluff Refinery on the Gulf Coast, from the Van Pool, would not be completed any too soon for handling the production from many wells which will no doubt be completed within the 90 days consumed in laying the line. There are now 11 wells drilling in the field, 11 producing, and 9 locations on which material is being moved in, and others being rigged up, and the field is taking on more activity than at any time heretofore, helping to make East Central Texas the most active district of the whole State at the present time, and possibly for the next 12 or more months.

Daily Average Production for Van Zandt County
Production for 24 Hours Ending 7 a.m. March 24

Company and name of well—	Bbls.
Pure Oil Co.'s No. 1 Jarman, 2 1-inch chokes	558
Pure Oil Co.'s No. 1 Thompson, one-half-inch choke	1,312
Pure Oil Co. and Shell's No. 1 Tunnell, one-half-inch choke	1,486
Pure-Shell's No. 2 Tunnell, one-half-inch choke	1,444
Pure-Texas' No. 1 Tunnell, 1-inch choke	265
Pure Oil Co.'s No. 1 Wells, three-fourths inch choke	722
Pure Shell's No. 1 Fowler, one-half-inch choke	1,285
Pure Oil Co.'s No. 1 Magers, two 1-inch chokes	386
Pure-Sun Oil Co.'s No. 1 Thompson, one-half-inch choke	1,449
Pure-Texas Co.'s No. 1 White, one-half-inch choke	1,149
Pure Oil Co.'s No. 1 Clark, 1-inch choke	315
Total	10,371

New Locations in Van Zandt County

Pure Oil Co.'s No. 1 Clark & Houston, located 120 feet from north and west of No. 1 Wells.

Pure Oil Co.'s No. 1 Tunnell, located 120 feet from south, 1,109 feet from west of 4.23-acre tract, M. Gross Survey.

Pure Oil Co.'s No. 3 Thompson, located 270 feet from north and 122 feet from east of 50.75-acre tract offsetting No. 1 Fowler.

Pure Oil Co.'s No. 3 Jarman, located 657 feet from south and 250 feet from west of 134-acre tract.

Pure Oil Co.'s No. 4 Jarman, located 825 feet from east and 560 feet from south of Jarman 134-acre tract.

Pure Oil Co.'s No. 2 Tunnell, located 575 feet from south and 105 feet from east of 4.23-acre tract.

Pure Oil Co.'s No. 2 Fowler, located 250 feet from south and 200 feet from west of 35.35-acre tract.

Pure Oil Co.'s No. 1 Leonard, located 777 feet from south and 200 feet from west of 47.5-acre tract.

Pure Oil Co.'s No. 2 Wells, located 250 feet out of most easterly NE cor. of 41.5-acre tract.

EAST CENTRAL TEXAS

Boggy Creek	3,500
Cedar Creek	50
Currie	370
Hill County	45
Mexia	4,246
Minerva	470
Nigger Creek	215
Powell	5,844
Richland	250
Thrall	31
Van	9,821
Wortham	870
Total East Central Texas	25,712
Week ending March 15	25,871
Decrease	159

E. L. DOHENY ACQUITTED

WASHINGTON, Mar. 22.—The last of the oil trials ended today, when Edward L. Doheny was found blameless of intent to corrupt a cabinet officer.

The aged prospector and oil man was cleared after having been under a cloud since the senate oil investigation six years ago.

Only one ballot was necessary for the jury of three women and nine men to agree that Doheny was innocent of fraudulent motives when he gave $100,000 in 1921 to Albert B. Fall, then the secretary of the interior, intrusted with handling naval oil reserve leases.

ACCOUNTANTS TO MEET

The next meeting of the Petroleum Accountants Society of Oklahoma will be held at the Independence Country Club, Independence, Kans., March 27 at 7 p.m. Arrangements have been made for a golf tournament to be played over the Independence Country Club course, starting at 2 p.m. At the evening meeting a paper on "Marketing Accounting," prepared by Charles Gillespie of the Phillips Petroleum Corp., will be discussed. E. A. Tittsworth of The Prairie Oil & Gas Co., Independence, Kans., is in charge of arrangements for the meeting.

The object of the society is the advancement of the science of petroleum accounting to increase the efficiency of oil company accounting by open discussion and constructive criticism of various systems, thereby eventually adopting standard forms and systems. Membership application blanks may be procured from R. M. Riggins, chairman of the membership committee, care Independent Oil & Gas Co., Tulsa, or from D. B. Catterlin, secretary of the society, care of the Gypsy Oil Co., Tulsa.

GILMORE RETIRES

CHICAGO, Mar. 22.—James A. Gilmore, former secretary of the American Oil Men's Association, will no longer be connected with the oil industry. He has received the appointment of secretary of the National Sporting Goods Distributors Association. The duties of his new office will require him to be in the east for the next three months, after which he plans to return to Chicago and open an office for his organization.

EAST CENTRAL TEXAS WILDCATS

EAST CENTRAL TEXAS WEEK ENDING MARCH 22

ANDERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 W. Johnson, 158½-acre tract in James Hall Sur., 995 ft. W of E and 100 ft. N of S L. of farm and Sur. ..... Top Pecan Gap chalk 2,908 ft. drlg. 2,990 ft. in chalk.

Magnolia Pet. Co.'s No. 2 H. B. Williams, 150 ft. out of NW cor. of S 480-acre tract in Wm. Bledsoe Sur. 2½ miles SW of Boggy Creek. ..... Drlg. 4,501 ft., hard shale.

Roeser et al's No. 1 W. L. Moody, 200 ft. out of SW cor. E 100-acre tract Jas. Welch Sur. ..... Drlg. 4,524 ft., hard shale

Sun Oil Co.'s No. 1 Bowers & Maier, 1,000 ft. NE of SW and 1,450 ft. NW of SE lines of 548-acre tract in E. G. Mayers Sur., 6 miles southwest of Palestine.. Crooked hole 997 ft.

HENDERSON COUNTY

H. B. Ashburn et al's No. 1 T. E. Barry, center of Barry's 59-acre tract in A. York Sur. ..... To spud.

Cranfill-Reynolds & Louisiana's No. 1 A. J. Broome, 1,350 ft. S of N and 150 ft. E of W lines of easterly Broome Farm in Samuel Chears Sur. ..... Drlg. 2,957 ft., shale. Top Pecan Gap 2,695 ft. Base 2,890 ft.

SMITH COUNTY

East Texas Oil Corp.'s No. 1 People National Bank, 150 ft. S and E of NW cor. their 259-acre tract John McFadden Sur. ..... S. D. 2,678 ft.

Owen Sloan Oil Co.'s No. 1 Starnes, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur. and 80 ft. E at right angles to W line of J. Waller Sur. ..... S. D. 1,322 ft.

Sutton et al's No. 1 W. D. Hammond, 150 ft. out of SW cor. W. D. Hammond tract in Jas. Reed Sur. ..... Drlg. 1,436 ft.

VAN ZANDT COUNTY

Central Oil Co.'s No. 1 R. H. Peters, 600 ft. from N and 19 ft. from W lines of 40-ft. strip along W line of Peters 70-acre tract in Nacogdoches Sur. ..... Derrick.

Central Oil Co.'s No. 1 West, 1,930 ft. W of E and 600 ft. N of S lines of J. West 500-acre farm in A. C. Walters Sur. ..... Drlg. 3,640 ft.

Cranfill & Reynolds Co.'s No. 1 C. S. Coker, 160 ft. each way from SW cor. of Cokers 85.5-acre tract in Wm. Daniel Sur, 9,000 ft. NE of Pure's No. 1 Magers.... Rigging up.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-acre tract John Wright Sur. ..... Derrick.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-acre tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler. ..... Drlg. 1,830 ft.

Dennis Oil Co.'s No. 1 Swain, located in John Walling Sur. ..... Drlg. 1,830 ft.

Hart Pet. Co.'s No. 1 L. L. Swain, 102 ft. S of N and 209 ft. E of W lines of 62-acre tract in SE cor. Swain 43.8-acre tract, 7,000 ft. E and 1,500 ft. N of discovery. ..... Location.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox in A. C. Night Sur. 1,785 ft. N of S line and 524 ft. E of W line ..... Derrick.

Pandem Oil Co.'s No. 1 Brinn & Gibbard in Ramon Sunigas Sur., NE of Grand Saline ..... Rig up.

W. B. Powell's No. 1 Bailey, 905 ft. N of S and 150 ft. W of E lines of 51-acre tract in Nacogdoches School Land ..... Top Pecan Gap 2,591 ft.; drlg. 2,615 ft.

Short et al's No. 1 B. C. Andrews, 330 ft. N and 160 ft. E of NE cor. of J. P. Farley 60-acre tract in Margaret Neil Sur. ..... Set 100 ft. surface casing.

Texas Chief Oil Co.'s No. 1 Foster, 600 ft. E of W line and 600 ft. N of S line of W. P. Foster's 151-acre tract in F. Montgomery Sur., 7 miles south of Canton. ..... Spudded and shut down.

Pure Oil Co.'s No. 1 Crim, located 250 ft. from S line, 690 ft. from E line E. L. Crim tract on 57-acre tract 2,500 ft. NW of discovery. Top chalk, 2,650 ft... S. D. 3,082 ft.; setting liner to test.

Pure-Humble's No. 1 L. V. Freeman, 250 ft. from E and 712 ft. from N line of 31.5-acre tract in John Walling Sur., one-half mile E of discovery. ..... Drlg. 2,350 ft.

Pure Oil Co.'s No. 1 Tunnell, 250 ft. S of N line, 200 ft. E of W line of Tunnell's 97.8-acre tract John Walling Sur., E of Shell's No. 1 Fowler. ..... Coring 2,878 ft.

Pure Oil Co.'s No. 2 Thompson, 525 ft. S of N line and 270 ft. E of W line of J. T. Thompson 49.4-acre tract Mund Gross Sur. E offset to Pure No. 1 Wells.. S. D. 2,548 ft.; waiting on drill pipe.

Shell's No. 3 Tunnell, 250 ft. N of S line and 200 ft. W of E line of Tunnell's 21.7-acre lease John Walling Sur. N offset to Shell's No. 1 Fowler. ..... Coring 2,902 ft.; slightly saturated

The Texas Company's No. 1 Tunnell, 645 ft. S of N line and 105 ft. E of W line Tunnell's 101.7-acre tract J. Walling Sur., offset The Texas Company's No. 1 Tunnell-A. ..... Coring 2,812 ft.

The Texas Company's No. 1 White, 665 ft. N of S line and 250 ft. E of W line of White 33.7-acre tract Nacogdoches C. S. line E of Pure No. 1 Magers .... T. D. 2,990 ft.; to set liner.

Van Zandt Oil & Dev. Co.'s No. 1 Robinson, located NE cor. of Y'Barbo Sur., 4 miles E of Grand Saline. .... Top Pecan Gap chalk 2,764 ft.; drlg. 2,768 ft.

Shell Pet. Corp.'s No. 1 Fowler, located 268 ft. S of N line and 122 ft. E of W line of B. M. Fowler 3-acre tract. ..... S. D. 2,505 ft.; Top Pecan Gap chalk 2,233 ft.

Pure Oil Co.'s No. 1 Wells, 105 ft. W of E line and 120 ft. N of S line of R. L. Wells 99-acre tract .... Drlg. 1,925 ft.

Pure Oil Co.'s and Hill & Hill's No. 1 Peters, 754 ft. N of S line and 200 ft. W of E line of R. H. Peters 70.8-acre tract. ..... Drlg. 1,635 ft.

Pure Oil Co.'s No. 1 Ellison, 736 ft. E of W line 200 ft. S of N line of Ellison 67-acre tract ..... Drlg. 1,423 ft.; cored with no oil shows.

WOOD COUNTY

Big Indian Oil Co.'s No. 1 R. J. King, 450 ft. W of E line and 150 ft. N of S line of King's 109-acre tract in Wm. Barnhill Sur. ..... S. D. 2,270 ft.

West Texas Royalty Co.'s No. 1 Negro Orphanage, 250 ft. N and W of SE cor. of 100-acre tract in C. E. Rivers Sur., 1 mile south of Mineola. ..... S. O. 1,847 ft., in Navarro.

Gulf Prod. Co.'s No. 1 N. F. Carver, 300 ft. out of NE cor. of N. F. Carver 60-acre tract in William Kerns Sur. ..... Reaming 3,893 ft.

A NEW GAS FIELD

BRADFORD, Pa., Mar. 24.—W. F. Van Derin of New York has leased a big forest acreage extending from the State Game Refuge at Norwich towards Emporium in Potter County and taking in the lands of Josiah Howard of Emporium located on the Allegheny-Susquehanna mountain divide.

Mr. Van Derin has started extensive oil and gas drilling developments on his vast holdings and progress of the work will be watched with great interest by McKean County oil men.

One well has already been completed and proved to be a large gas producer.

A second well is being drilled in this week just across the Cameron County line.

Gas is being found at a depth of 1,800 feet in the Kane sand.

FOR OIL TRANSPORTATION

Many companies for many years have standardized on Westcott Valves for oil transportation. They are recognized for their dependability for pipe line service—and are made in every standard size and working pressure for this service.

Discharge Gate Valve

Suction Gate Valve

WESTCOTT VALVES

Manufactured by the Westcott Valve Company
East St. Louis, Ill.

Manufacturers of products for the Oil and Gas industries exclusively.
Full stocks carried in East St. Louis and all stores of the Continental Supply Company

Of Interest to Sales Departments

PREDICT $550,000,000 GASOLINE TAX IN 1930

The nation's gasoline tax bill for 1930 will total $550,000,000, an increase of approximately $100,000,000 over the 1929 bills, according to preliminary estimates of the American Petroleum Institute.

Early last year the institute estimated the 1929 total at $450,000,000. Reports as of February 15, 1930, placed actual collections at $449,731,000.

The increase in the 1930 collections is based almost entirely on an expected gain in gasoline consumption. The total takes into consideration the increased tax rate in Oregon, which moved into the 4-cent bracket on January 1. It does not include actual or expected rate increases in other states, however, nor the recent increase in Idaho which raised the tax to 5 cents from 4 cents per gallon. Legislation seeking higher rates is pending in Mississippi, New York, New Jersey and Texas and there is agitation for increases in Massachusetts, North Dakota, Kansas, Louisiana and others.

Only Missouri, where the rate legally is fixed at 2 cents for a decade, and California, whose State officials from governor down publicly have declared the revenues sufficient for present and contemplated highway programs, have displayed no tendency to seek higher taxes.

Insitute records show that when the 1930 tax bill of $550,000,000 has been collected, motorists of the United States will have paid a total of $1,744,400,000 in the past five years. This is more than six times greater than the total for the preceding five years, or $279,400,000. The totals do not include registration fees, license fees, property taxes, etc.

TREXLER TO ST. LOUIS

ST. LOUIS, Mo., Mar. 21.—Jay Trexler has been appointed division manager to industrial lubricating oil sales, Shell Petroleum Corp., at St. Louis. Mr. Trexler has been associated with the organization as a salesman of industrial lubs in Chicago. Before going with the Shell Corp., he was in charge of the motor oil sales department of the Independent Oil Men of America.

REPRESENTS JESCO COMPANY

CHICAGO, Mar. 22.—The Jesco Lubricants Co. will be represented in Illinois by the Lake Petroleum Co. The Jesco Lubricants Co. was organized late in 1929 by a group of former Marland Refining Co. officials and executives. The president of the company is James A. Edwards, former technical engineer of the Marland Refining Co., and the secretary and treasurer is Claude Johnson of the same company.

Associated with them as stockholders are Sam Collins, former vice president in charge of sales, Marland Refining Co., and J. B. Mudd, former manager of the Chicago division. The plant is located at 1437 North Gentry Street, North Kansas City, Mo.

TO SELL ACCESSORIES

DETROIT, Mich., Mar. 25.—The White Star Refining Co. of this city has decided to place on sale at its various stations, lines of tires, batteries and other auto accessories. It is stated that the company is not committed to the continuance of the experiment, which it regards at present as a promising experiment. It proposes to give the plan a thorough test and to handle lines of goods, particularly of tires, under its own name and brands.

HADLICK EXPLAINS PRACTICES WHICH CODE IS ELIMINATING

By Paul E. Hadlick
Secretary, Marketing Division, American Petroleum Institute*

Every person who drives a car or who, in any way, purchases petroleum products is a student of your marketing structure—perhaps a closer student than you sometimes realize. I am still such a student with perhaps the advantage of a little inside knowledge—or insight into the problems you, as oil men, face when you establish a marketing structure. Perhaps I shouldn't dignify it with the words "establish a marketing structure" because from my observations most marketing structures have grown like Topsy.

Some oil men trace their troubles to the source—production. But is that to prevent at least an effort at stabilizing marketing? We might as logically argue that it is useless to build levees on the Mississippi because the reason for the overflow is the lack of forests in the North Central states. Reforestation would accomplish the purpose, but in the meantime lives would be lost and property damaged each year during the floods.

I believe you will agree with me that our greatest contact point with the public is at the pump or filling station. That is the point where we should gain and build up confidence; and yet it is the point where the greatest demoralization exists.

What is it that encourages every owner of a corner lot to endeavor to put a filling station thereon; or the real estate promoter to do the same thing only on many corner lots? It is the appeal of prospective profits larger than could be obtained by putting any other business there. And that appeal was created no doubt by visiting filling stations and noting the many little things given away, or apparently given away.

Sales Methods

There has been altogether too much of this in selling gasoline and oil; not on its merits, not on the service, not on the basis of power or transportation, but on the basis of the customer being permitted to buy a pillow, flashlight, chinaware, radio, camera, baby teether or what-not, at so-called wholesale price by saving a given number of coupons.

Then, too, we have the ads in newspapers, followed up by large signs on the premises, announcing the giving away of from one to six quarts of oil, or five gallons of gasoline on an opening day. In some communities this practice became so bad that companies felt obliged to have so-called opening days every time a new man was placed in a station. I know of one thoroughfare in a city that had enough opening days to give the neighbors free oil all summer because the practice became so bad that coupons good for six quarts of oil were given away on opening days with each five gallons of gasoline purchased. I can also recall a local situation where several companies gave away five gallons of gasoline with a purchase of one gallon of motor oil for a dollar!

This type of merchandising, along with prizes, gambling devices, etc., has made the oil industry laughing stock among people of high and low degree. It smacks of the quack doctor of former years with his loud ballyhoo and a bottle of medicine for every ill; not to mention his free book of stale jokes with each sale.

Lack of a stabilized price policy has been another point your public has judged you by. I don't mean differences in price existing between competitors, but differences in price for the same product out of the same pump, depending, as someone aptly put it, upon the color of the hair, social position or physical deformities of the customers. Secret rebates have played their part as well.

Allowance of discounts on coupon books of from 5 per cent to as high as 20 per cent has wrecked confidence in competitive circles in many a community. This type of rebating is very vicious and strikes at the very core of a sound marketing structure.

The indiscriminate abuse of the installation of equipment at uneconomical points, and the laying of concrete, construction of canopies and painting of buildings has brought down upon you the wrath of the public and inspired such articles as the one recently appearing in Collier's, called "The Battle of the Pumps."

People were not slow to discover trucks of one concern dumping their gasoline in another's pumps. Oh yes, you say, it was bootlegged into those pumps due to an oversupply of manufactured goods at some or all refineries. That is no excuse. The public is entitled to the brand of gasoline appearing on the pump globe and if the oil industry falls down it would not be long before states and municipalities would take a hand.

Contractual obligations have not been considered in the past as seriously as they should. I am thankful to note an improvement along this line.

Subterfuges, in the form of sign rentals, and others, have been used in the past to gain dealer business. What respect had the dealer when the oil company tried to show him how to run his business. Could the dealer not in many cases reply by saying: "You don't know how to run your own business, how do you expect to tell me how to run mine?"

Other abuses in marketing too numerous to mention, crept in until the industry was faced with the problem of doing something or submit to a major surgical operation. I don't exonerate the refiner in the picture. He must bear his fair share of the blame whether he markets direct to the public, through dealers, or through jobbers. In fact the industry, as a whole, must assume the responsibility of reconstructing a sane marketing policy; a policy that will command respect within and without the industry.

I have related to you just a few of the bad practices that have until recently existed. You may not agree that all of them represent bad business practice but you will admit that most of them have had as their most important reason for being done the excuse that someone else was doing it first.

What I have outlined above as contributing to lack of profits, lack of respect from your public, and lack of confidence among you in the industry, are all prohibited by the National Code of Practices for Marketing Refined Petroleum Products. Simple, isn't it, when we break it up into plain English?

*Annual meeting, Michigan Oil Men's Association.

SHELL TO ADD 12 STATIONS

BEAUMONT, Tex., Mar. 24.—Erection of 12 filling stations in Beaumont by the Shell Petroleum Corp. is bringing this company actively into the oil and gasoline distribution business here. Three filling stations are now under construction, as well as a large warehouse and distribution plant. Nine other retail stations are planned for immediate construction.

SHELL PUSHES SALES OF ITS SPECIALTY PRODUCTS

The Shell Petroleum Corp., of St. Louis, Mo., through an active newspaper advertising campaign, is introducing four specialty products to the consuming trade of the Mid-Continent area. These products are Shell Handy Oil, Kleanzit, Spot Remover and Lighter Fluid. The names of these products indicate their uses and market.

The corporation also will introduce a fifth product by the name of Fly Spray in the near future. The other four products have been on the market in a limited way for some three months.

G. E. Walk, manager of the specialties division of the Shell by-product department, is enthusiastic in his comments upon the far-reaching importance of the Shell specialties advertising campaign. "The home is the fountain head of the nation and any movement that tends to make life more livable for the housekeeper and the members of her household, is worthy of the time, effort and expenditure put behind it."

The specialty division extends at present over four territories or 28 states in the Mid-Continent section. This division is covered by salesmen, whose practice it is to enter a city or community in groups of 10 or 12 men to open up retail outlets for these new products.

REFINERS AT BURNER SHOW

Announcing the completed program for the seventh annual convention of the American Oil Burner Association in Chicago April 7-12, Executive Secretary Harry F. Tapp reports that the oil burner show, to run concurrently with the convention, will eclipse anything ever attempted by the industry before. Thirty days before the convention 71 exhibitors had contracted for 109 booths for the display of oil burners and accessories.

A significant development of the exhibition, the first of its kind designed to attract the consumer and general public as well as the trade, is the interest displayed by oil refiners and distributors. Two nationally known oil companies have taken booths for display purposes and the Burning Oil Distributors Association of Chicago has reserved three. Additional booths had to be provided to meet the demands of exhibitors.

SHELL ENTERS WASHINGTON

WASHINGTON, D. C., Mar. 22.—The Shell Eastern Petroleum Products, Inc., is actively getting into the retail gasoline trade of Washington, D. C. Two retail stations, prominently located, have been taken over by the Shell company and with bright paint and gasoline pumps mounted with the familiar Shell sign the Shell company is holding itself out to supply the public with motor fuel and other products needed by automobile owners. There have been numerous announcements of purchases of gasoline stations by the Shell company and indications point to a time in the near future when the company will be as fully represented over the District of Columbia as is any other oil company. Full page advertisements in which the Shell insignia is conspicuous have appeared in all of the Washington daily newspapers.

BUILD COMPOUNDING PLANT

The Swan Finch Oil Corp. will construct a large compounding and shipping plant on a 2½-acre tract just acquired at Newark, N. J., on Passaic River. Upon completion of Newark plant, the company will discontinue operations at Elizabeth, where most of its plant buildings were destroyed by fire last fall.

BORE HOLE SURVEYING BY SURFACE ORIENTATION

(Continued from Page 104)

being withdrawn. Plate 2 shows the record of a check or round trip survey made during test number three. This round trip record represents ordinary practice during the course of routine surveying operations and it alone affords a basis of comparison almost as satisfactory and convincing as that produced by the more elaborate series of tests.

An example of the results obtained by a duplicate or round trip survey is shown by Plate 6. The survey went to a depth of 4,096 feet and involved 46 observations or readings, each way. The horizontal deflection was 235 feet. The vertical angles increased with considerable regularity from zero at the surface to 11½ degrees at bottom. While being withdrawn from the well the surveying instrument successively occupied each of the various stations at which it had made its record while entering the well. It was therefore possible to make 46 comparisons of rotation of the pipe both at its upper and lower ends. The pipe used was 2-inch pump tubing which is much more flexible than drill pipe. The pipe was, for convenience of measuring rotation, frequently turned at the derrick floor and as a consequence the datum side of the instrument faced approximately the same direction at each station. In other words, the instrument when reaching a certain depth coming out faced within about 45 degrees of the direction it had previously faced at the same depth when descending. During its whole downward course the instrument made two complete revolutions horizontally and did approximately the same while coming up. A comparison of all these readings showed identical action at both top and bottom of the pipe, with only such discrepancy as would be due to instrumental inaccuracy. The degree of coincidence of the two series of observations is shown by the two courses plotted in Plate 6. The data were also compared in other ways and similar results obtained.

Round Trip Survey

Another example of evidence furnished by a duplicated or round trip survey is worth mentioning because physical conditions were considerably different although the outcome was the same. A drilling well was surveyed to a depth of about 6,300 feet, using drill pipe of 3½ inches outside diameter and running in casing having 6⅝ inches diameter. The hole was approximately vertical to a depth of about 4,200 feet, the inclination from vertical being less than 3 degrees. Within this distance the hole, as disclosed by a plane view, described a complete loop or spiral having a diameter of approximately 40 feet and then struck off in a comparatively constant direction. The portion of the well below 3,200 feet where the direction of its course was rather uniform, had a peculiar vertical profile, first flattening out to a vertical angle of about 14 degrees, then straightened up again until the inclination was only about 3 degrees. While going into the well the instrument turned around three times, due to the influence of the hoisting cables, and while coming out it completed four revolutions. Hence the instrument during its upward course was only once facing in the same direction that it had been while descending. Observations on the upward trip were discontinued at a depth of about 1,500 feet, making available 54 duplicated readings of inclination and direction. The horizontal discrepancy between the two surveys was 16 feet and comparison of readings, as in the preceding instance, showed identical rotation of both ends of the drill pipe.

It has been suggested that pipe would develop a twist simply by being hung up in a long string. The possibility of this has been tested and failed to develop any evidence to support the theory. If such an action did take place it would be compensated for in the course of ordinary surveying operations which put full weight on the pipe before measuring for orientation.

In conclusion it can be safely asserted that the surveying of bore holes by means of orientation from the surface is a method amply accurate to meet the needs of the petroleum industry. As a corollary it must be borne in mind that the entire operation is one involving precision and therefore assumes adequate equipment in the hands of a thoroughly informed and competent observer.

CROOKED HOLE PROBLEM ON THE GULF COAST

(Continued from Page 106)

fill the hole with cement from the bottom to the point where it is desired to straighten it, or if the hole has been drilled much deeper than the crook, the top of a cement bridge is placed just above the bend. The hole is then redrilled slowly, beginning at the top of the cement, and the new hole has a fair chance to more nearly approach the vertical than the previous one.

It sometimes becomes necessary to straighten a hole that is already cased, or to change the direction of a crooked hole that may be either cased or uncased so that it will go toward the productive sand. A method sometimes used is to orient a whipstock into the hole with its inclined side so directed that the bit will tend to sidetrack the hole in the desired direction as drilling proceeds. In the Gulf Coast a few attempts have been made to use this method, but it has not been sufficiently developed to determine its merits under the conditions that exist here.

Cost of Surveys and Drilling Wells Straight

The cost of surveying wells consists of the actual cost of the surveys themselves plus the loss of drilling time while surveying.

The direct and indirect costs of making separate directional surveys with every 500 feet of additional hole amount to approximately 2 to 3 per cent of the total cost of a producing well. The increased cost due to the changes in drilling practice to keep a hole straight and the cost of straightening a crooked hole will usually vary from 5 to 10 per cent of the total cost of the hole, depending upon the work required to correct possible crooks in the hole.

Advantages of Straight Holes

Several advantages are gained in the Gulf Coast by drilling holes straight. The principal one is in nearly eliminating dry holes in proven territory where the position of the narrow productive zone is known from surveys of previous wells. These surveys give the expected horizontal drift of a well between the surface of the ground and the productive zone. With that data, well chosen locations for new wells can be made.

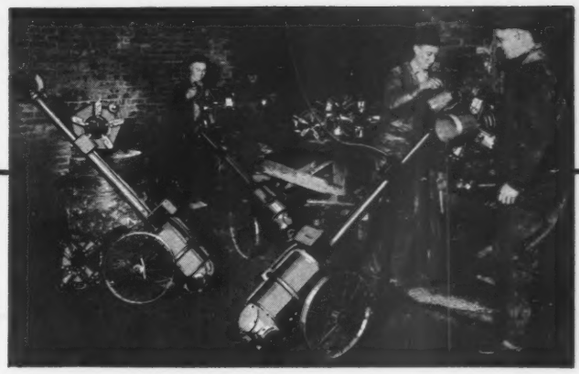
Directional surveys assist in the equal spacing of wells at the level of the producing sand. This gives a more thorough drainage, and accordingly a higher recovery per acre and per well. Formerly a dry hole would tend to stop drilling operations from extending around the periphery of a dome beyond the dry hole. A survey should be made of the dry hole, and if it is found that the hole is crooked and that the bottom is not in trend with the productive zone, drilling should be continued around the dome past the dry hole.

Straight holes reduce the number of fishing jobs and facilitate the recovery of the "fish." They also reduce the hazard of accidentally sidetracking the hole when reaming or fishing.

Lifting costs are lower when wells are straight since there is less friction and accordingly an increase of pumping efficiency and longer life of equipment over that of crooked holes.

Summary

The results during the last 18 months of well surveying in the Gulf Coast indicate that straight hole practice tends to decrease the number of dry holes and the total number of wells necessary for proper drainage. It increases the average production per well and lowers the lifting costs. However, it adds 1 to 10



THREAD AND CUT PIPE ON THE JOB!

NO DELAY—SAVE TIME AND LABOR

TAKE "TOLEDO" PORTABLE POWER DRIVES
"TOLEDO" PORTABLE THREADERS
"TOLEDO" PORTABLE CUTTERS
"TOLEDO" PORTABLE WORK BENCHES

TO THE JOB WHERE PIPE IS TO BE INSTALLED

"TOLEDO" equipment, capacity ⅛″ to 12″ is efficient, relatively low in first cost and overhead. You can avoid expensive delays and handle pipe at minimum cost with "TOLEDO" portable equipment.

Write for complete catalog and name of nearest distributor.

"TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

NEW YORK OFFICE, 72 LAFAYETTE ST.

Of Interest to Sales Departments

PREDICT $550,000,000 GASOLINE TAX IN 1930

The nation's gasoline tax bill for 1930 will total $550,000,000, an increase of approximately $100,000,000 over the 1929 bills, according to preliminary estimates of the American Petroleum Institute.

Early last year the institute estimated the 1929 total at $450,000,000. Reports as of February 15, 1930, placed actual collections at $449,731,000.

The increase in the 1930 collections is based almost entirely on an expected gain in gasoline consumption. The total takes into consideration the increased tax rate in Oregon, which moved into the 4-cent bracket on January 1. It does not include actual or expected rate increases in other states, however, nor the recent increase in Idaho which raised the tax to 5 cents from 4 cents per gallon. Legislation seeking higher rates is pending in Mississippi, New York, New Jersey and Texas and there is agitation for increases in Massachusetts, North Dakota, Kansas, Louisiana and others.

Only Missouri, where the rate legally is fixed at 2 cents for a decade, and California, whose State officials from governor down publicly have declared the revenues sufficient for present and contemplated highway programs, have displayed no tendency to seek higher taxes.

Insitute records show that when the 1930 tax bill of $550,000,000 has been collected, motorists of the United States will have paid a total of $1,744,400,000 in the past five years. This is more than six times greater than the total for the preceding five years, or $279,400,000. The totals do not include registration fees, license fees, property taxes, etc.

TREXLER TO ST. LOUIS

ST. LOUIS, Mo., Mar. 21.—Jay Trexler has been appointed division manager to industrial lubricating oil sales, Shell Petroleum Corp., at St. Louis. Mr. Trexler has been associated with the organization as a salesman of industrial lubs in Chicago. Before going with the Shell Corp., he was in charge of the motor oil sales department of the Independent Oil Men of America.

REPRESENTS JESCO COMPANY

CHICAGO, Mar. 22.—The Jesco Lubricants Co. will be represented in Illinois by the Lake Petroleum Co. The Jesco Lubricants Co. was organized late in 1929 by a group of former Marland Refining Co. officials and executives. The president of the company is James A. Edwards, former technical engineer of the Marland Refining Co., and the secretary and treasurer is Claude Johnson of the same company.

Associated with them as stockholders are Sam Collins, former vice president in charge of sales, Marland Refining Co., and J. B. Mudd, former manager of the Chicago division. The plant is located at 1437 North Gentry Street, North Kansas City, Mo.

TO SELL ACCESSORIES

DETROIT, Mich., Mar. 25.—The White Star Refining Co. of this city has decided to place on sale at its various stations, lines of tires, batteries and other auto accessories. It is stated that the company is not committed to the continuance of the experiment, which it regards at present as a promising experiment. It proposes to give the plan a thorough test and to handle lines of goods, particularly of tires, under its own name and brands.

HADLICK EXPLAINS PRACTICES WHICH CODE IS ELIMINATING

By Paul E. Hadlick
Secretary, Marketing Division, American Petroleum Institute*

Every person who drives a car or who, in any way, purchases petroleum products is a student of your marketing structure—perhaps a closer student than you sometimes realize. I am still such a student with perhaps the advantage of a little inside knowledge—or insight into the problems you, as oil men, face when you establish a marketing structure. Perhaps I shouldn't dignify it with the words "establish a marketing structure" because from my observations most marketing structures have grown like Topsy.

Some oil men trace their troubles to the source—production. But is that to prevent at least an effort at stabilizing marketing? We might as logically argue that it is useless to build levees on the Mississippi because the reason for the overflow is the lack of forests in the North Central states. Reforestation would accomplish the purpose, but in the meantime lives would be lost and property damaged each year during the floods.

I believe you will agree with me that our greatest contact point with the public is at the pump or filling station. That is the point where we should gain and build up confidence; and yet it is the point where the greatest demoralization exists.

What is it that encourages every owner of a corner lot to endeavor to put a filling station thereon; or the real estate promoter to do the same thing only on many corner lots? It is the appeal of prospective profits larger than could be obtained by putting any other business there. And that appeal was created no doubt by visiting filling stations and noting the many little things given away, or apparently given away.

Sales Methods

There has been altogether too much of this in selling gasoline and oil; not on its merits, not on the service, not on the basis of power or transportation, but on the basis of the customer being permitted to buy a pillow, flashlight, chinaware, radio, camera, baby teether or what-not, at so-called wholesale price by saving a given number of coupons.

Then, too, we have the ads in newspapers, followed up by large signs on the premises, announcing the giving away of from one to six quarts of oil, or five gallons of gasoline on an opening day. In some communities this practice became so bad that companies felt obliged to have so-called opening days every time a new man was placed in a station. I know of one thoroughfare in a city that had enough opening days to give the neighbors free oil all summer because the practice became so bad that coupons good for six quarts of oil were given away on opening days with each five gallons of gasoline purchased. I can also recall a local situation where several companies gave away five gallons of gasoline with a purchase of one gallon of motor oil for a dollar!

This type of merchandising, along with prizes, gambling devices, etc., has made the oil industry laughing stock among people of high and low degree. It smacks of the quack doctor of former years with his loud ballyhoo and a bottle of medicine for every ill; not to mention his free book of stale jokes with each sale.

Lack of a stabilized price policy has been another point your public has judged you by. I don't mean differences in price existing between competitors, but differences in price for the same product out of the same pump, depending, as someone aptly put it, upon the color of the hair, social position or physical deformities of the customers. Secret rebates have played their part as well.

Allowance of discounts on coupon books of from 5 per cent to as high as 20 per cent has wrecked confidence in competitive circles in many a community. This type of rebating is very vicious and strikes at the very core of a sound marketing structure.

The indiscriminate abuse of the installation of equipment at uneconomical points, and the laying of concrete, construction of canopies and painting of buildings has brought down upon you the wrath of the public and inspired such articles as the one recently appearing in Collier's, called "The Battle of the Pumps."

People were not slow to discover trucks of one concern dumping their gasoline in another's pumps. Oh yes, you say, it was bootlegged into those pumps due to an oversupply of manufactured goods at some or all refineries. That is no excuse. The public is entitled to the brand of gasoline appearing on the pump globe and if the oil industry falls down it would not be long before states and municipalities would take a hand.

Contractual obligations have not been considered in the past as seriously as they should. I am thankful to note an improvement along this line.

Subterfuges, in the form of sign rentals, and others, have been used in the past to gain dealer business. What respect had the dealer when the oil company tried to show him how to run his business. Could the dealer not in many cases reply by saying: "You don't know how to run your own business, how do you expect to tell me how to run mine?"

Other abuses in marketing too numerous to mention, crept in until the industry was faced with the problem of doing something or submit to a major surgical operation. I don't exonerate the refiner in the picture. He must bear his fair share of the blame whether he markets direct to the public, through dealers, or through jobbers. In fact the industry, as a whole, must assume the responsibility of reconstructing a sane marketing policy; a policy that will command respect within and without the industry.

I have related to you just a few of the bad practices that have until recently existed. You may not agree that all of them represent bad business practice but you will admit that most of them have had as their most important reason for being done the excuse that someone else was doing it first.

What I have outlined above as contributing to lack of profits, lack of respect from your public, and lack of confidence among you in the industry, are all prohibited by the National Code of Practices for Marketing Refined Petroleum Products. Simple, isn't it, when we break it up into plain English?

*Annual meeting, Michigan Oil Men's Association.

SHELL TO ADD 12 STATIONS

BEAUMONT, Tex., Mar. 24.—Erection of 12 filling stations in Beaumont by the Shell Petroleum Corp. is bringing this company actively into the oil and gasoline distribution business here. Three filling stations are now under construction, as well as a large warehouse and distribution plant. Nine other retail stations are planned for immediate construction.

SHELL PUSHES SALES OF ITS SPECIALTY PRODUCTS

The Shell Petroleum Corp., of St. Louis, Mo., through an active newspaper advertising campaign, is introducing four specialty products to the consuming trade of the Mid-Continent area. These products are Shell Handy Oil, Kleanzit, Spot Remover and Lighter Fluid. The names of these products indicate their uses and market.

The corporation also will introduce a fifth product by the name of Fly Spray in the near future. The other four products have been on the market in a limited way for some three months.

G. E. Walk, manager of the specialties division of the Shell by-product department, is enthusiastic in his comments upon the far-reaching importance of the Shell specialties advertising campaign. "The home is the fountain head of the nation and any movement that tends to make life more livable for the housekeeper and the members of her household, is worthy of the time, effort and expenditure put behind it."

The specialty division extends at present over four territories or 28 states in the Mid-Continent section. This division is covered by salesmen, whose practice it is to enter a city or community in groups of 10 or 12 men to open up retail outlets for these new products.

REFINERS AT BURNER SHOW

Announcing the completed program for the seventh annual convention of the American Oil Burner Association in Chicago April 7-12, Executive Secretary Harry F. Tapp reports that the oil burner show, to run concurrently with the convention, will eclipse anything ever attempted by the industry before. Thirty days before the convention 71 exhibitors had contracted for 109 booths for the display of oil burners and accessories.

A significant development of the exhibition, the first of its kind designed to attract the consumer and general public as well as the trade, is the interest displayed by oil refiners and distributors. Two nationally known oil companies have taken booths for display purposes and the Burning Oil Distributors Association of Chicago has reserved three. Additional booths had to be provided to meet the demands of exhibitors.

SHELL ENTERS WASHINGTON

WASHINGTON, D. C., Mar. 22.—The Shell Eastern Petroleum Products, Inc., is actively getting into the retail gasoline trade of Washington, D. C. Two retail stations, prominently located, have been taken over by the Shell company and with bright paint and gasoline pumps mounted with the familiar Shell sign the Shell company is holding itself out to supply the public with motor fuel and other products needed by automobile owners. There have been numerous announcements of purchases of gasoline stations by the Shell company and indications point to a time in the near future when the company will be as fully represented over the District of Columbia as is any other oil company. Full page advertisements in which the Shell insignia is conspicuous have appeared in all of the Washington daily newspapers.

BUILD COMPOUNDING PLANT

The Swan Finch Oil Corp. will construct a large compounding and shipping plant on a 2½-acre tract just acquired at Newark, N. J., on Passaic River. Upon completion of Newark plant, the company will discontinue operations at Elizabeth, where most of its plant buildings were destroyed by fire last fall.

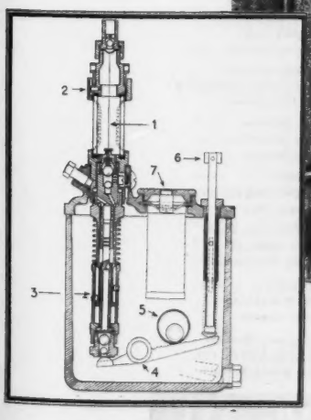
McCORD

A BETTER LUBRICATOR

Where cylinder lubrication is of prime importance, the McCord Class "LF" Mechanical Lubricator fills a need of long standing. It has been designed with one aim — to provide an absolutely dependable and accurate mechanical lubricator. Mass production, together with highly efficient manufacturing methods alone make this lubricator commercially possible.

Your Eye Tells

Your eye furnishes positive proof that oil in the right amount is being supplied by the McCord "LF" Lubricator. Drops of oil one after another pass in review like soldiers on parade. Undetected leakage of oil is impossible after it has passed through the "LF" Sight Feed. Your eye tells you whether or not your cylinders are being properly lubricated. Because every drop of oil passes through the sight feed glass accurate timing is possible.



The reputation of McCord Mechanical Lubricators is the result of over thirty years' experience in this line of manufacture.

McCORD

RADIATOR & MFG. CO., DETROIT, MICH.

LUBRICATOR DIVISION

Dearborn

Special 134

Diesel Manufacturers Recommend It

From the report of a Dearborn Service man:

"They sent out circular letter from this office to all their customers, advising that if they are having trouble with scale in water jackets, the best treatment for this purpose is Dearborn Chemical Company's Special 134. Mr. C——— said that the most of their complaints are caused from scale cracking the cylinder jackets."

Use Dearborn Special 134 for removal of scale regardless of thickness or density from all equipment including water lines.

Reliable Cleaners

Dearborn Cleaner No. 7

For opening drains. For cleaning caked and extra dirty concrete floors.

Dearborn Cleaner No. 5

For general service in removing oil, grease and dirt from all types of oil field equipment.

For cleaning oil and dirt from overalls and clothing. For reclaiming rags. For cleaning ordinarily dirty concrete floors.

Dearborn Cleaner No. 3

Dearboline, a non-explosive liquid cleaner that gives surprising results on metal surfaces.

Get acquainted with the entire group of Dearborn Products. Write now. Tell us your needs and we will make recommendations.

Dearborn Chemical Company

"A House of Chemical Engineers" In Its Forty-third Year of Service to Industry.

310 South Michigan Ave., Chicago
205 E. 42nd St., New York
Canadian Offices and Factory:
2454-2464 Dundas St., West, Toronto

Every Dearborn Product is as reliable as is NO-OX-ID, the original rust preventive

NO-OX-ID
IRON-RUST
TRADE MARK
The Original Rust Preventive

"For every joint on every line"

The higher the pressure the tighter becomes the joint—when you use Victaulic Couplings.

There's nothing like them for leak-proof pipe lines.

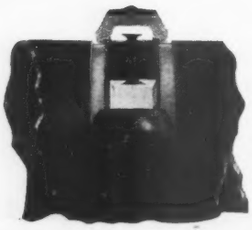
Installation costs are lower.

• • •

Mail the Coupon for Victaulic Bulletin

For all sizes of steel, wrought iron, cast iron and spiral weld pipe—any pressure. Mail the coupon for detailed information.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York



"For every joint on every line"

FLEXIBLE LEAK-PROOF

VICTAULIC

REG. U. S. PAT. OFF.

PIPE COUPLINGS

VICTAULIC DISTRIBUTORS

Mid-Continent and Rocky Mountains
HANLON-WATERS, INC.
Tulsa, Oklahoma

Pacific Coast
DUCOMMUN CORPORATION
Los Angeles and San Francisco, California

Western Pennsylvania
PITTSBURGH SUPPLY COMPANY
Pittsburgh, Pennsylvania

Illinois, Indiana
BELL and GOSSETT
Chicago, Illinois

Ohio
CASE HARDENING SERVICE CO.
Cleveland, Ohio

Minnesota, Wisconsin, Iowa
F. S. VAN BERGEN
Minneapolis, Minnesota

Canada
D. B. McWILLIAMS
Toronto, Canada

West Virginia and Kentucky
THE McJUNKIN SUPPLY CO.
Charleston, West Virginia

FOR OIL, GAS, WATER, SEWAGE, COMPRESSED AIR, ETC.

For uses, installations, specifications and prices, fill in and mail this coupon.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

Please send me Victaulic Bulletin No. 1

Name.....

Address.....

sday,

BORE HOLE SURVEYING BY SURFACE ORIENTATION

(Continued from Page 104)

being withdrawn. Plate 2 shows the record of a check or round trip survey made during test number three. This round trip record represents ordinary practice during the course of routine surveying operations and it alone affords a basis of comparison almost as satisfactory and convincing as that produced by the more elaborate series of tests.

An example of the results obtained by a duplicate or round trip survey is shown by Plate 6. The survey went to a depth of 4,096 feet and involved 46 observations or readings, each way. The horizontal deflection was 235 feet. The vertical angles increased with considerable regularity from zero at the surface to 11½ degrees at bottom. While being withdrawn from the well the surveying instrument successively occupied each of the various stations at which it had made its record while entering the well. It was therefore possible to make 46 comparisons of rotation of the pipe both at its upper and lower ends. The pipe used was 2-inch pump tubing which is much more flexible than drill pipe. The pipe was, for convenience of measuring rotation, frequently turned at the derrick floor and as a consequence the datum side of the instrument faced approximately the same direction at each station. In other words, the instrument when reaching a certain depth coming out faced within about 45 degrees of the direction it had previously faced at the same depth when descending. During its whole downward course the instrument made two complete revolutions horizontally and did approximately the same while coming up. A comparison of all these readings showed identical action at both top and bottom of the pipe, with only such discrepancy as would be due to instrumental inaccuracy. The degree of coincidence of the two series of observations is shown by the two courses plotted in Plate 6. The data were also compared in other ways and similar results obtained.

Round Trip Survey

Another example of evidence furnished by a duplicated or round trip survey is worth mentioning because physical conditions were considerably different although the outcome was the same. A drilling well was surveyed to a depth of about 6,300 feet, using drill pipe of 3½ inches outside diameter and running in casing having 6⅝ inches diameter. The hole was approximately vertical to a depth of about 4,200 feet, the inclination from vertical being less than 3 degrees. Within this distance the hole, as disclosed by a plane view, described a complete loop or spiral having a diameter of approximately 40 feet and then struck off in a comparatively constant direction. The portion of the well below 3,200 feet where the direction of its course was rather uniform, had a peculiar vertical profile, first flattening out to a vertical angle of about 14 degrees, then straightened up again until the inclination was only about 3 degrees. While going into the well the instrument turned around three times, due to the influence of the hoisting cables, and while coming out it completed four revolutions. Hence the instrument during its upward course was only once facing in the same direction that it had been while descending. Observations on the upward trip were discontinued at a depth of about 1,500 feet, making available 54 duplicated readings of inclination and direction. The horizontal discrepancy between the two surveys was 16 feet and comparison of readings, as in the preceding instance, showed identical rotation of both ends of the drill pipe.

It has been suggested that pipe would develop a twist simply by being hung up in a long string. The possibility of this has been tested and failed to develop any evidence to support the theory. If such an action did take place it would be compensated for in the course of ordinary surveying operations which put full weight on the pipe before measuring for orientation.

In conclusion it can be safely asserted that the surveying of bore holes by means of orientation from the surface is a method amply accurate to meet the needs of the petroleum industry. As a corollary it must be borne in mind that the entire operation is one involving precision and therefore assumes adequate equipment in the hands of a thoroughly informed and competent observer.

CROOKED HOLE PROBLEM ON THE GULF COAST

(Continued from Page 106)

fill the hole with cement from the bottom to the point where it is desired to straighten it, or if the hole has been drilled much deeper than the crook, the top of a cement bridge is placed just above the bend. The hole is then redrilled slowly, beginning at the top of the cement, and the new hole has a fair chance to more nearly approach the vertical than the previous one.

It sometimes becomes necessary to straighten a hole that is already cased, or to change the direction of a crooked hole that may be either cased or uncased so that it will go toward the productive sand. A method sometimes used is to orient a whipstock into the hole with its inclined side so directed that the bit will tend to sidetrack the hole in the desired direction as drilling proceeds. In the Gulf Coast a few attempts have been made to use this method, but it has not been sufficiently developed to determine its merits under the conditions that exist here.

Cost of Surveys and Drilling Wells Straight

The cost of surveying wells consists of the actual cost of the surveys themselves plus the loss of drilling time while surveying.

The direct and indirect costs of making separate directional surveys with every 500 feet of additional hole amount to approximately 2 to 3 per cent of the total cost of a producing well. The increased cost due to the changes in drilling practice to keep a hole straight and the cost of straightening a crooked hole will usually vary from 5 to 10 per cent of the total cost of the hole, depending upon the work required to correct possible crooks in the hole.

Advantages of Straight Holes

Several advantages are gained in the Gulf Coast by drilling holes straight. The principal one is in nearly eliminating dry holes in proven territory where the position of the narrow productive zone is known from surveys of previous wells. These surveys give the expected horizontal drift of a well between the surface of the ground and the productive zone. With that data, well chosen locations for new wells can be made.

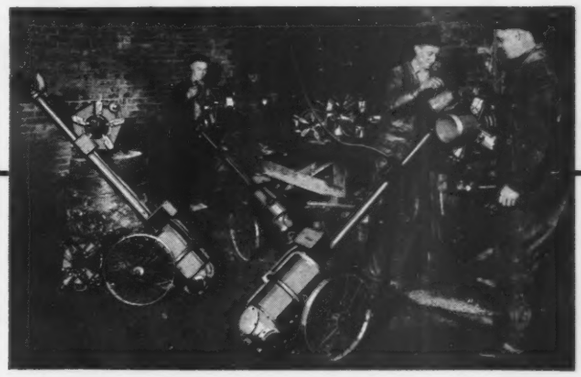
Directional surveys assist in the equal spacing of wells at the level of the producing sand. This gives a more thorough drainage, and accordingly a higher recovery per acre and per well. Formerly a dry hole would tend to stop drilling operations from extending around the periphery of a dome beyond the dry hole. A survey should be made of the dry hole, and if it is found that the hole is crooked and that the bottom is not in trend with the productive zone, drilling should be continued around the dome past the dry hole.

Straight holes reduce the number of fishing jobs and facilitate the recovery of the "fish." They also reduce the hazard of accidentally sidetracking the hole when reaming or fishing.

Lifting costs are lower when wells are straight since there is less friction and accordingly an increase of pumping efficiency and longer life of equipment over that of crooked holes.

Summary

The results during the last 18 months of well surveying in the Gulf Coast indicate that straight hole practice tends to decrease the number of dry holes and the total number of wells necessary for proper drainage. It increases the average production per well and lowers the lifting costs. However, it adds 1 to 10



THREAD AND CUT PIPE ON THE JOB!

NO DELAY—SAVE TIME AND LABOR

TAKE "TOLEDO" PORTABLE POWER DRIVES
"TOLEDO" PORTABLE THREADERS
"TOLEDO" PORTABLE CUTTERS
"TOLEDO" PORTABLE WORK BENCHES

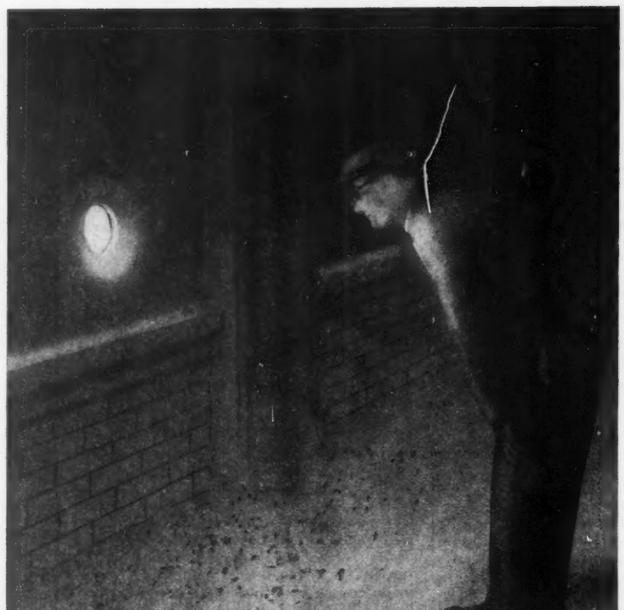
TO THE JOB WHERE PIPE IS TO BE INSTALLED

"TOLEDO" equipment, capacity ⅛" to 12" is efficient, relatively low in first cost and overhead. You can avoid expensive delays and handle pipe at minimum cost with "TOLEDO" portable equipment.

Write for complete catalog and name of nearest distributor.

"TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO
NEW YORK OFFICE, 72 LAFAYETTE ST.



The men in the Bethlehem Alloy Steel Plant have had many years of experience. You are justified in placing implicit confidence in the steels they turn out. To these men the making of fine alloy steels is second nature.

Staying Power for the parts that *bear the brunt*

To stand the shocks, stresses and vibrations to which alloy steels are subjected in the vital parts of motor vehicles and other machines, more than strength is needed. The staying power required is the result of a combination of properties that the steel-maker must work into the steel by the exercise of fine judgment at every step of manufacture.

Bethlehem is exceptionally well fitted to turn out alloy steels having that added degree of excellence that enables them to stand terrific punishment without suffering fatigue and breaking.

The resources of a great steel-making organization, a staff or metallurgists who have had long experience in both the manufacture and application of alloy steels, together with a plant-operating personnel deeply aware of the responsibilities that their product must carry, make a combination hard to beat for producing alloy steels worthy of trust.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Detroit, Cincinnati, Chicago, St. Louis.

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

Export Distributor: Bethlehem Steel Export Corporation, 25 Broadway, New York City.

BETHLEHEM ALLOY STEELS

per cent to the drilling costs, but this is warranted by the advantages obtained. The speed and accuracy of the surveys are being rapidly improved, and it seems probable that the surveying of deep wells and the straightening of crooked holes will gradually become an established practice in the Gulf Coast.

SOUTHERN LOUISIANA DOMES ARE REVIEWED

(Continued from Page 42)

Traveling east along the Old Spanish Trail from Lake Charles the old producing areas of Welch and Evangeline are encountered, each served well by roads and rail connections. During 1929 the Vacuum Oil Co. obtained some production just north of Roanoke and now is doing some development work here. At Evangeline, one of the oldest of the Louisiana Gulf Coast fields, deep drilling has recently renewed activities, the Yount Lee Oil Co. having completed the deepest commercially productive well in the Gulf Coast area at a depth of 7,447 in the closing months of 1929.

Operations at Port Barre

The operations at Port Barre, 12 miles east of Opelousas, are served through Lafayette via Opelousas. Here the Gulf, Texas and Shell interests hold properties. Lafayette also serves as a shipping point for operations at Anse La Butte, where the Yount Lee Oil Co. is drilling.

From New Iberia, north via Bayou Teche and the Lakes of the Atchafalaya, the following operations can be reached by boat: The Texas Company at Catahoula Lake near St. Martinsville, Gulf near Loreauville, Rycade, Humble at Bayou Bouillon or Bayou La Rompe, and Bayou DesGlaise Dome where the Union Sulphur Co. has drilled some new wells, later turning the dome over to the Standard Oil Co. of Louisiana for further work. Bayou Bouillon is served by rail through a station at Rycade,, where the Southern Pacific crosses the Atchafalaya.

The general area covered from New Iberia as noted is reached only by boat and the problems incident to the development work here are novel in many ways, as communication between operations and town headquarters is either lacking entirely or is very difficult. One superintendent to make his rounds covers more than 70 miles daily by speedboat. Results in this area have not been entirely gratifying from a money-making viewpoint, but enough oil has been found at each of the domes to support the belief that ensuing wells will produce more satisfactory amounts of oil.

From New Iberia south, development work has been attempted on several domes with few encouraging results as far as oil production is concerned. Wells have been drilled on the following domes: New Iberia, Jefferson Island, Avery Island, Weeks Island and in Vermillion Bay. The above includes two areas, Avery Island and Jefferson Island, where large salt mines are operating.

Drilling at Vermillion Bay

The Texas Company is drilling at Vermillion Bay. This dome seems to have a thick stratum, which is exceedingly difficult to penetrate with the drill on account of its extreme hardness. The operations at Vermillion Bay are served by water via Bayou Teche to Franklin, thence via canal to West Cote Blanche Bay and across to Vermillion Bay.

The Pure Oil Co. is preparing to initiate operations at Belle Isle, which lies almost at the mouth of the Atchafalaya River, midway between Wax Bayou and the point where the Atchafalaya enters the Gulf.

Along the Old Spanish Trail on the western outskirts of Patterson, the Vacuum Oil Co. is drilling its first test in this region. Midway between Patterson and Berwick the Louisiana Land & Exploration Co. has drilled two shallow tests to definitely place the depth of certain horizons and is now putting down a deep test midway between the two shallow holes previously drilled.

Crossing the Atchafalaya River at Berwick to Morgan City and traveling east to Thibodaux, one passes close to the Gulf company's operations near Chacohoula at Lutcher Dome. Here several wells have been drilled without obtaining production, although they have definitely proven the existence of a salt dome. This area lies in a swamp territory, to which access is extremely difficult with modern transportation equipment. It has been necessary to construct something over 2 miles of wooden road with a regular railroad cross-tie base. This road is built in such a manner with the center section elevated about 6 inches, so that it is practically impossible to drive off into the marsh, also allowing a driver to back up with safety in case a car comes in the opposite direction, and at intervals provision has been made to allow cars to pass. All materials must be hauled to location over this timber roadway.

Testing Dome's Productivity

Following along Bayou La Fourche north from Thibodaux, we find Napoleonville, the seat of the Gulf's operations at the Napoleonville Dome on the Armilise plantation, where drilling is now being carried on in an effort to prove the productivity of the dome.

Further north, where Bayou La Fourche meets the Mississippi at Donaldsonville, we cross the river and find the Gulf's operations at Darrow, where one well has been drilled on the Belle Helene Sugar Co.'s land without definite results being indicated.

A few miles to the east is encountered the Sorrento Dome, which enjoys the distinction of furnishing the first commercial oil producer east of the Mississippi River in Louisiana, the Gulf's fourth test coming in in February, 1928, for several thousand barrels at a depth of 1,660 feet. Production at this point now amounts to about 200 bbls. daily. While the town of Sorrento has good rail connections the dome itself lies in an area to which access is difficult.

Recrossing the Mississippi River again to the west bank and following it to the north, the Shell Petroleum Corp.'s operations west of the town of Whitecastle are encountered. At this point the Shell company has drilled several tests, all indicating the presence of oil, and its last effort, completed late in 1929, is flowing about 350 bbls. from a depth close to 6,000 feet. The same conditions exist here as at Sorrento, in that the town of Whitecastle has good rail connections, but from the town to the site of operations is a tough haul.

The next town to the north of any size is Plaquemine, which serves as the contact point for the Standard Oil Co. of Louisiana for its operations at Bayou Blue, where it has several wells on production and is in the process of drilling several more. Bayou Blue is not far distant from the Rycade-Humble operations at Bayou Bouillon, and these two areas are accessible one to the other by way of the many bayous and channels which really go to make up the Atchafalaya. Plaquemine also serves as a point of entrance to Bayou Bouillon from the east.

All Moved by Barge

All material for these operations must be shipped to either Plaquemine or Rycade by rail and transferred to barges for towing to location; thus, in addition to several handlings is added the difficulty of handling heavy equipment from floating barges. All production from both operations must also be shipped out by barge, a process very costly and cumbersome.

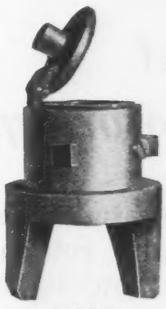
To the north of Plaquemine are the domes of Grosse Tete, also called Bayou Choctaw, as yet undrilled, and another on Bayou Henry, also untested. These can be readily reached from Plaquemine.

South from Thibodaux, following the Bayou La Fourche, we come to Houma, La., famous prior to 1929 mainly for its sugar cane and oysters, which became during that year the center of operations for the Texas Company in that company's operation of the domes acquired by it from the Louisiana Land & Exploration Co.

Bayou Terrebonne leads into Terrebonne Bay and thence into the Gulf of Mexico proper, thus affording means of access to the seven domes being developed by The Texas Company in and adjacent

Miller sand pump

These 4 type bottoms make the MILLER *adaptable to any type formation*



Sand Pump
Bottom illustrated in position in the pump.

Bailer Bottom
will speed up production in cavy holes by time saved in picking up cuttings.

Chisel Bottom
will save the expense of running tools and its chisel shape prevents sticking in tightly packed sands.

Star Bottom
used for cutting the sand loose and preferred by some to the Chisel Bottom.

With the Miller Combination Bailer and Sand Pump you have the choice of four type bottoms—SAND PUMP bottom, used when cleaning out with tools, CHISEL and STAR bottoms, used with tractor, winch and pulling machines when tools are not used, and BAILER bottom, used in drilling as a common bailer. The Miller Bailer and Sand Pump—the combination tool with a bottom for every job.

In the MILLER the sand line is run through bail connecting directly to the plunger eliminating a rod and permitting use of a 25 or 30-foot tube.

The barrel of the Miller is made of National Seamless Tubing, all steel construction throughout with Sivyer Steel Castings—built to stand abuse. Constructed for economical operation; designed for greater efficiency.

Made in 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9-inch sizes, with 20, 25 and 30-foot lengths.

Patented
March 1, 1921—No. 1370340
January 20, 1925—No. 1523604

MILLER

Combination Bailer & Pump Co.

General Offices and Plant
Sapulpa, Oklahoma

HUMBLE OILS
HUMBLE OIL & REFINING CO. HOUSTON, TEXAS

FEEL

the Thrill of
Flashlike Motoring!

Enjoy this rare pleasure! Let Flashlike Gasoline give you the thrill of "flashlike" motoring in winter. Power such as you never thought possible! Smoothness that reduces wear and tear, and adds to the life of the motor! Flexibility which reveals new performance ranges for your car! Always clean burning—with less crank-case dilution — more mileage — longer service from your oil.

With Flashlike Gasoline, use Humble Velvet Motor Oil, which has the body and easy flowing qualities to protect bearings at all driving speeds and temperatures. Its efficient piston seal holds compression and adds to the motor's power.

Use Flashlike Gasoline and Humble Velvet Motor Oil regularly. Get them at stations wherever you see the Humble signs.

HUMBLE OIL & REFINING CO.

HUMBLE FLASHLIKE GASOLINE

to Terrebonne Bay. Headquarters have been established at Lapeyrouse, about 25 miles below Houma on Bayou Terrebonne. These headquarters may be reached from Houma by auto or boat.

Seven domes are under progress of development from this base as follows: Lake Barre, Caillou Island, Lake Pelto, Bay St. Elaine, Dog Lake Bayou, Bay Junop and Four Isle Bayou. It is practically impossible to visit all seven domes in one daylight period if any stops are made at all. Bay Junop, the fartherest of these domes from the base, is reached by going about 25 miles out in the Gulf of Mexico proper, which in severe storm periods is hazardous. Traveling at night by speedboat to any of this territory is also filled with all kinds of possibilities and is forbidden unless emergency demands.

Six of the Domes Found Productive

Each of the seven domes mentioned has been proven commercially productive with the exception of Four Isle Bayou, where the dome has been located by the drill and will undoubtedly be found productive at the next location, and Bay Junop, where an oil show was encountered in the first well, but was not commercially productive. Bay St. Elaine has yielded gas production of commercial value. The remaining four are commercially productive of oil.

When one considers that every article must be transported on barges and handled many times in loading and reloading, the enormous task presented in this work is visualized to a small degree. Fuel must be hauled by barge and in this area difficulties in obtaining a satisfactory water supply have been serious, all water wells producing a brackish water. For some time all water was barged to locations for boiler use, but lately a condenser has been rigged up from the pump exhaust to a header and thence run through the bay waters and about four-fifths of the water now used is procured from this condensation, thus necessitating the addition of less than 100 bbls. of new water daily at each location and providing a much purer and more satisfactory boiler water than was before obtainable. The solution of this problem has lightened the burden as flues and crown sheets were continually giving trouble before construction of this condenser.

The isolation of this work necessitates carrying at each rig duplicate parts for almost all machinery as shutdown time is costly.

All apparatus, rig, derrick pumps, tanks, pipe racks, boilers and other paraphernalia are supported either by piling or cribbing laid on a mat base. The foundations of this material are no small item in themselves, some layouts being supported by more than 300 piles varying from 40 to 60 feet in length. Thus, pile-driving equipment, derrick barges and dredges are all part of the necessary equipment.

Infested With Marine Borers

The Waters of Terrebonne Bay, like many other marine waters, are infested with marine borers, of which the Teredo and Bankia, more commonly known as the ship-worm, are the more common type. These borers attack all plain wooden foundations and in Terrebonne Bay have rendered untreated piling foundations unsafe for heavy loads in a period of about six months.

The Texas Company has adopted a program calling for the use of southern yellow pine piling, treated with a minimum of 20 pounds of Grade 1 creosote oil per cubic foot, and has outlined a rigid specification to preclude attack from marine borers through bolt holes, cutoff points and other possible points of entry.

The operations at Lake Pelto, Lake Barre, Caillou Island, Dog Lake and Bay St. Elaine are served by four camps, consisting of two larger buildings on piling foundations reached only by boat.

From camp to rig and return is accomplished by means of a Jo boat or lugger, a slow-moving craft, native to southern Louisiana. One of these boats is at each drilling rig at all times as carrier in case of emergency.

Another factor which seriously hampers operations in this area is the uncertainty of weather conditions. It is almost impossible for small craft to find their way about in a heavy fog or when a heavy sea is running. The derrick platform are set some 10 feet above mean low tide level, but even then the waves often sweep the derrick floor when a storm or wind comes up, rendering the continuation of work impossible.

The speedboat, which replaces the auto on the bayous of southern Louisiana, has a habit of going dead or out of commission when it is needed most and to be stranded, for instance, on the way to Bay Junop, 20 miles out in the Gulf of Mexico, away from any beaten track, is anything but a pleasant experience, particularly if a heavy sea is running.

Boats Must Have Pilots

Boats, both small and large, require a pilot and one experienced in marine engine repairs is preferred; thus the expense of a chauffeur must be added to transportation cost of all administrative personnel, as well as the expense of an automobile for land transportation, thus involving a dual transportation expense.

From the standpoint of the drilling crews, many difficulties are encountered, one which comes to mind as solved in an unusual way, is the problem of mosquitos and gnats. On several rigs in Terrebonne Bay a large propeller driven by a dismounted Ford motor is placed in one corner of the derrick, faced to play fully on the driller, whose position is more or less fixed and whose hands are too busily occupied to fight mosquitos. This problem is at least partly solved by the 25-mile gale set up by the oscillation of the propeller which reaches practically all parts of the derrick floor.

Lying directly east of The Texas Company area just described the Gulf Refining Co. has two domes under lease, Leesville and Bay Marchand, lying below Lockport on Bayou La Fourche.

Lake Grand Ecaille, also known as Lake Washington, which forms a large arm of Barataria Bay, famous for the delicious shrimp taken from its waters, is the scene of drilling activity, being carried on by the Humble Oil & Refining Co. on a dome owned jointly by the Humble and Gulf and Shell interests. At present two wells are drilling and should result in valuable information concerning this area. The location of this dome is slightly east of south from New Orleans and between Barataria Bay proper and the south of the Mississippi River. It is reached only by water. This section is reputed to have been the base of operations of the famous old sea pirate, Jean La Fitte, for whom the town of La Fitte is named.

No Work on These Domes

The following domes have been located south from New Orleans, but as yet no work has been attempted on them: Salvador on the northwestern shore of the lake of the same name; Lake Hermitage, lying between the upper reaches of Barataria Bay and the Mississippi River; Potash, near the town of that name on the Atlantic side of the Mississippi, between the river and Breton Sound; Tiger Pass, or Spanish Pass, in the lower delta of the Mississippi, northwest of Pilot Town.

The most southerly dome and undoubtedly the one most difficult of access by any means except via airplane is The Texas Company's Garden Island Bay Dome, located practically at the mouth of the Mississippi River. Here The Texas Company has drilled three wells and has met with many difficulties.

Material is brought to the location direct by barge, but for executives to reach the scene of operations it is necessary to drive to Buras below New Orleans, where the road ends, and catch the mail boat from Buras to Pilot Town, which runs once daily. It is then necessary to have a company speedboat come to Pilot Town and provide transportation from Pilot Town to location. As noted, the mail boat runs once daily in each direction, and in order to catch it on the return trip from Pilot Town to Buras, one has to start from the scene of drilling operations at 3 o'clock in the morning.

REMARKABLE TENSILE STRENGTH *Proven*

IN THE LAYNE

MILLED GROOVE SCREEN

102½ TONS *Strong*

The sensational tensile strength of *Layne Milled Groove Screen*—102½ tons load at yield point and more than 153 tons under ultimate load—was proven in recent tests by the Pittsburgh Testing Laboratory.

These tests reveal *Milled Groove* as oil industry's most important and greatest invention, and gives you extraordinary guaranteed strength coupled with exclusive ability to increase your production from 33-1/3% to 100%.

Milled Groove has more than a quarter century of experience and development built into it and is remarkably strong from every angle; side compression test by Pittsburgh Testing Laboratory resulted in 51,800 pounds resistance; end compression, 144,300 pounds resistance; and compression test on full length of pipe resulted in 108,000 pounds resistance.

Layne Milled Groove Screen is used the world over by large and important companies who will testify to this screen's outstanding superiority—a symbol of superb screening performance.

Install *Milled Groove* instead of wishing you had.

The Layne & Bowler Co.

Houston THE LAYNE Texas

Increases Production

The Layne New York Co.
30 Church St., New York

The Layne & Bowler Corp.
Los Angeles, Cal.

Vickers, Limited
London, England

A QUARTER CENTURY OF EXPERIENCE AND DEVELOPMENT

SKILLED SUPERVISION

Guarantees the Quality

OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES—
GASOLINE—LUBRICATING OILS—
NAPHTHA—GAS—OILS—
WAX—PETROLEUM COKE—
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices: PITTSBURGH, PA.

District Sales Offices

New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

—Ocean Terminals—

Boston (Beverly) Mass.
Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 50)

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW, Sec. 1-10-6w..Shut down 100 ft.
J. M. Henry et al's No. 1 Abraham, SE cor. NW, Sec. 4-5-8w ..... Rig.

GRANT COUNTY

Gypsy Oil Co.'s No. 1 Belderbeck, C SE SE, Sec. 27-28-7w..Wilcox 5,647 ft.; drlg. 5,902 ft.
Baucher et al's No. 1 Deadman, SW SE, Sec. 12-28-4w..Fishing 4,737 ft.
Cowden et al's No. 2 Vollmer, CEL NE SW, Sec. 22-25-4w..Shut down 5,640 ft.
Otstot's No. 1 Tabor, C NE NE SE, Sec. 23-26-3w..... Drlg. 4,620 ft.

GARVIN COUNTY

Nelson et al's No. 1 Strickland, NE SW, Sec. 10-4-3..... Drlg. 990 ft.
Pickham-Harris' No. 1 Community Gaines, C NW NE, Sec. 11-4-1 ..... Drlg. 4,152 ft.

GREER COUNTY

Helmerich & Payne's No. 1 Henck, NW cor. Sec. 23-6-24w ..... Fishing 2,240 ft.
I. T. I. O. et al's No. 1 Fee, C SW NE, Sec. 17-6-24w..... Drlg. 2,107 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor., Sec. 17-4-24w ..... Shut down 715 ft.
S. M. Stauffer's No. 1 Castleman, SW NE, Sec. 8-4-26w..Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW, Sec. 12-25-20w..... Drlg. 1,370 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW, Sec. 14-26-24w ..... Drlg. 7,610 ft.

HASKELL COUNTY

Mid-Western's No. 1 Posester, C NE SE, Sec. 33-10-22..Drlg. 1,100 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e ..... Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE SW, Sec. 10-9-18e..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE, Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW, Sec. 15-5-11..... Rig.
Canady et al's No. 1 Kanard, NW SW, Sec. 29-9-12..... 1,000,000 ft. gas 2,284-90 ft.; total depth 2,315 ft.; shut down.
Irwin et al's No. 1 Jones, SE NW, Sec. 30-5-10..... Drlg. 810 ft.

KAY COUNTY

Blankenship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2..... Rig.
Skelly and Empire's No. 1 Maple, SW cor., Sec. 20-27-4..Drlg. 1,503 ft.

KINGFISHER COUNTY

Superior Oil Co.'s No. 1 Story, SE cor., Sec. 25-19-5w.... Fishing 6,285 ft.
Galt Brown's No. 1 Wolf, NW SE, Sec. 6-16-7w..... Shut down 6,015 ft.

KIOWA COUNTY

Merrick Oil Co.'s No. 1 Kelly, NW cor. SE, Sec. 20-7-17w. Shut down 1,525 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 Fee, SE SW NW, Sec. 23-9-24..Total depth 5,440 ft.; 15,000,000 ft. gas; fishing 5,488 ft.

LATTIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW, Sec. 23-5-18e ..... Underreaming 1,850 ft.

LINCOLN COUNTY

Tom Slick Oil Co.'s No. 1 Hammer, SE NW NW Sec. 35-16-2 ..... Spudding.

LOGAN COUNTY

Currier's No. 1 Young, C SW NE SW, Sec. 34-17-4w.... Rig.
Haley & Smith's No. 1 Guier, SE cor. SW, Sec. 33-18-3w. Shut down 3,970 ft.

McCLAIN COUNTY

Sunray Oil's No. 1 Newsome, C SE NE NE, Sec. 16-5-3..Wilcox 3,995-4,015 ft.; 3,000 ft. fluid in the hole.

McINTOSH COUNTY

T. C. Young's No. 1 Derrison, Sec. 3-12-15 ..... Shut down 1,275 ft.
Jennings Brothers' No. 1 Crabtree, NW SW NE, Sec. 31-10-14 ..... Cementing 5-inch casing 4,714 ft.
Patterson et al's No. 1 Smith, SW cor. NW SE, Sec. 32-9-16 ..... Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE, Sec. 21-11-19..Shut down 1,011 ft.

NOBLE COUNTY

Gypsy Oil Co.'s No. 1 Bergstrom, SE NE, Sec. 28-22-1w..Drlg. 2,570 ft.
Peerless et al's No. 1 Wentz, NW SW, Sec. 22-22-1..... Drlg. 3,279-3,310 ft.; flowed 80 bbls. completed.

OKFUSKEE COUNTY

Irwin et al's No. 1 Davis, SE NW, Sec. 16-13-9..... Drlg. 1,475 ft.
Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9..... Shut down 2,795 ft.
E. L. Robinson's No. 1 Rice, NW, Sec. 2-10-9..... Location.
Shepard et al's No. 1 Neveas, SE NW SW, Sec. 3-12-10..Shut down 3,661 ft.

OKLAHOMA COUNTY

Cromwell-Franklin's No. 2 Thompson, SW NE Sec. 15-12-3w ..... Drlg. 2,300 ft.
Warr et al's No. 1 Castle, SW NW, Sec. 20-11-3w..... Drlg. 675 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE, Sec. 17-12-4w ..... Drlg. 4,510 ft.
Magnolia and Ramsey's No. 1 Johnson, C NE SW, Sec. 35-13-3w ..... Drlg. 5,050 ft.
Ryan Consolidated's No. 1 Lawton, NE NW, Sec. 3-11-2w. Drlg. 5,110 ft.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW, Sec. 13-13-1w ..... T. D. 6,971 ft.; water; plugging back 6,871 ft.; testing.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE, Sec. 10-11-3w ..... Drlg. 4,788 ft.

OSAGE COUNTY

Peters Petroleum Co.'s No. 1, SW cor. NE Sec. 5-22-8..Rig.
Kay County Gas' No. 1, C N half NE, Sec. 28-24-4..... Drlg. 1,850 ft.
Continental Oil Co.'s No. 1, NW SE SE, Sec. 24-24-5..... Drlg. 2,810 ft.

PAWNEE COUNTY

Shaffer O. & R. Co.'s No. 1 Jones, SW NE, Sec. 22-20-5..Location.
Cochran et al's No. 1 Green, NE cor. SW, Sec. 15-23-5... Rig.

PITTSBURG COUNTY

Empire O. & R. Co.'s No. 1 Williams, C NE SE, Sec. 33-7-16e ..... Shut down 3,975 ft.

POTTAWATOMIE COUNTY

Keister & Manning's No. 1 Rowlett, SW SE NE, Sec. 30-8-4 ..... Drlg. 4,468-80 ft.; pinched to 100 bbls.
Payne Drlg. Co.'s No. 1 Bullock, SE NE, Sec. 22-6-3..... Shut down 4,130-4,201 ft.; hole full water.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW, Sec. 23-12-24w... Drlg. 1,917 ft.
L. C. Hivick's No. 1 Davis, C NW NE, Sec. 4-11-26w.... Shut down 2,905 ft.

SEMINOLE COUNTY

M. H. Watt et al's No. 1 McGilbray, SE NE Sec. 4-8-8 ..Location.
Magnolia and Twin State Oil Co.'s No. 1 Harns, SW NE NE Sec. 8-5-6 ..... Spudding.
Producers & Refiners' No. 1 Factor, NW SW, Sec. 30-6-6. Drlg. 3,070 ft.
Independent Oil & Gas Co.'s No. 1 Johnson, C NE NE, Sec. 33-9-8 ..... Drlg. 3,300 ft.
Prairie Oil & Gas Co.'s No. 1 Anders, NW cor., Sec. 23-6-6 ..... Drlg. 3,430 ft.
Anderson & Kerr's No. 1 Morgan, SE cor. Sec. 19-6-6 .... Drlg. 2,914; 700 ft. oil in hole.
Sunray Oil Co.'s No. 1 Sunday, NW SE, Sec. 35-5-5.... Location.

WASHITA COUNTY

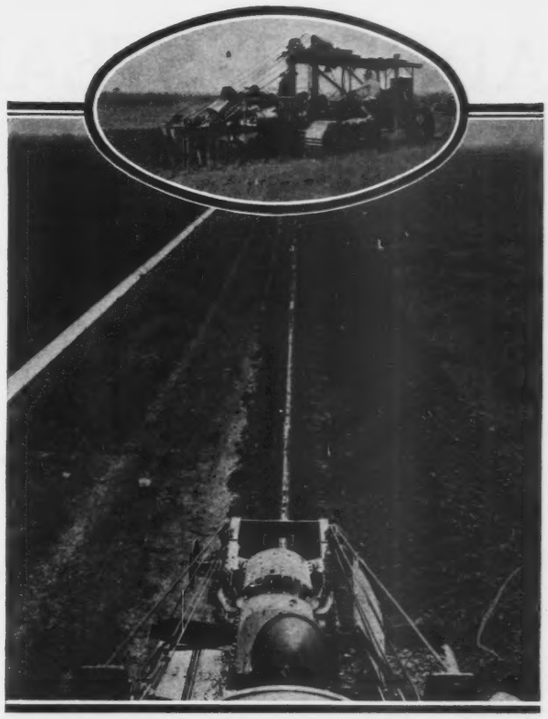
Southern Inv. Co.'s No. 1 Musie, NW cor. Sec. 10-9-20w.. Rig.

WOODS COUNTY

Peerless O. & G. Co.'s No. 1 Crowell, C NW NE Sec. 23-28-16w ..... Drlg. 4,950 ft.
Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW, Sec. 10-25-15w ..... Fishing 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW, Sec. 33-27-16w ..... Drlg. 6,790 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE, Sec. 2-23-17w ..... Shut down 1,387 ft.



"It meets *all* requirements

in general pipe-line work, in the toughest kinds of ditching — through rocky soils, woods and generally rough country," says R. J. Sheehan of The Sheehan Pipe Line Construction Company, Tulsa, Oklahoma. Owning many Buckeyes, these well-known contractors advise further that 2,500 lineal feet of 24-inch by 3½-foot trench in 8 hours is *average* performance for one of these ditchers.

But these same Buckeyes are capable of setting the pace — *making records*, as is evidenced by one of them cutting 8,150 lineal feet of 24-inch by 30-inch ditch in 10 hours at Streator, Illinois, in May 1929.

Two of the many superior Buckeye working features, in the judgment of Mr. Sheehan, are the Alligator (crawler) traction and the wheel-type digging mechanism, which provide positive cutting and accuracy of grade.

Solve your ditching problems with a Buckeye—there is one for every need. Interesting literature sent on request.

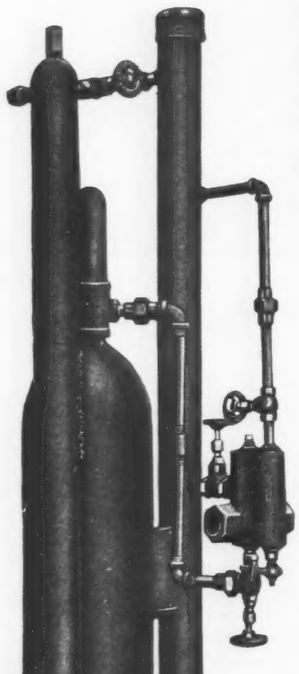
THE BUCKEYE TRACTION DITCHER CO.
FINDLAY, OHIO
There's a Buckeye Sales and Service Office near You

for over thirty years Buckeye

BADGETT STEAM LUBRICATOR

Saves Six Ways!

1. TIME
2. TROUBLE
3. SHUT-DOWNS
4. DELAYS
5. ENGINE WEAR
6. and MONEY



Badgett Lubricators operate on every type of steam engine. Get Badgett Equipment now and end all your lubrication troubles. Good lubrication means money to you, the life of your machinery, the time of your workmen. Badgett Lubricators eliminate packing piston rods on engines and pumps.

This lubricator is a positive, regular feed; can be attached to any steam line; sits upright; may be attached at bottom or both ends; operated by water pressure. Here are some present users of Badgett Lubricators:

Southern Drilling Co., Oklahoma City
John Mabee, Tulsa
Lofland Bros., Tulsa
J. Henry, Duncan, Okla.
Summit Drilling Co., Tulsa
G. J. Beard, Duncan, Okla.
Hubbard & Wofford, Tulsa
Herman Wagener, Oklahoma City
Byers Drilling Co., Oklahoma City
A & B Drilling Co., Oklahoma City
Capitol Drilling Co., Oklahoma City
Prince & Prince, Electra, Texas
Clark & Cowden, Duncan, Okla.
Independent Oil Co., Oklahoma City
G. E. Gilberth, Oklahoma City
Golden & Cochran, Wink, Texas
Haynes Drilling Co., Wink, Texas
Murphy & Graham, Seminole, Okla.
Steinberg & Yerkee, Seminole, Okla.
Fain-McGaha, Wichita Falls, Texas
Allison & Clevinger, Seminole, Okla.
Winkler & McQueen, Duncan, Okla.
Reynold Drilling Co., Seminole, Okla.
Manahan Drilling Co., Seminole, Okla.
Herndon Drilling Co., Seminole, Okla.
Hartman & Hamilton, Seminole, Okla.

You are not obligating yourself when you write for details.

Sold through leading supply houses in the Mid-West and through the National Supply Co. in the State of California.

BADGETT STEAM LUBRICATOR COMPANY

CHICKASHA, OKLAHOMA

Prairie Oil & Gas et al's No. 1 Wilbur, NE cor. NW, Sec. 22-23-17w ..... Drlg. 6,200 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE, Sec. 15-21-19w ..... Shut down 1,910 ft.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Bryant-Croxton's No. 1 Mason, NW NE NW, Sec. 4-1s-14. Shut down 1,493 ft.
Bookshire's No. 1 Guinn, NW cor., Sec. 18-3s-10..... Shut down 100 ft.

BRYAN COUNTY

Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-6s-7e... Rig on ground.
Slab Oil Co.'s No. 1 Ryle, NW SE SE, Sec. 27-6s-7..... Drlg. 460 ft.
Marshall's No. 2 Fee, C SW SE NW, Sec. 26-5s-7..... Shut down; 6-in. csg. 265 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE, Sec. 36-9s-9e ..... Shut down 2,200 ft.

CARTER COUNTY

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE, Sec. 32-4s-2 ..... Fishing 1,980 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW, Sec. 15-6-19e ..... Shut down 1,346 ft.

COMANCHE COUNTY

Pelwin Oil Co.'s No. 1 Tafepirdy, C NW NE NE, Sec. 5-1s-9w ..... Location.

COTTON COUNTY

Empire O & R. Co.'s No. 1 Chambers, NW SE, Sec. 8-3-9w ..... Drlg. 1,769 ft.
T. Medlin's No. 1 Johns, SW SE, Sec. 8-2s-9w ..... Shut down 2,526 ft.

JEFFERSON COUNTY

Hart's No. 1 Standfield, C W half NE SE, Sec. 33-7s-6w. Underreaming 1,135 ft.

JOHNSTON COUNTY

N. A. Neff's No. 1 Chapman, C SW NW, Sec. 20-4s-5..... Location.

LOVE COUNTY

Gilcrease Oil's No. 1 Burkheart, NE NW, Sec. 13-6s-1... Rig.

MARSHALL COUNTY

Golden Rule Oil Co.'s No. 1 Reeves-Gray, C NW SE NE, Sec. 19-6s-6 ..... Drlg. 500 ft.

McCURTAIN COUNTY

Milton et al's No. 1 Vase, SW NW, Sec. 26-6s-21..... Shut down 2,287 ft.

STEPHENS COUNTY

Wirt Franklin Petroleum Corp.'s No. 1 McPhail, NW SE, Sec. 1-2s-7w ..... Drlg. 2,891 ft.
Smythe et al's No. 1 Johnson, NE cor., Sec. 30-2-8w.... Swabbing 2,476-87 ft.; swab. 13 bbls. oil first day.

TILLMAN COUNTY

Bridwell Oil Co.'s No. 1 Rutherford, NE SE Sec. 11-4s-16w ..... Drlg. 1,400 ft.
Flake's No. 1 Barba, NE SE NE SE, Sec. 19-1s-16w.... Shut down 832 ft.
Allen Brothers' No. 1 Howell, SW NE, Sec. 13-1-17w.... Fishing 825 ft.
Nance et al's No. 1 Massie, NE NW, Sec. 36-1s-6w..... Location.
Landfair et al's No. 1 Smith, SE SW SE, Sec. 6-2s-16w.. Shut down 2,535 ft.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 52)

ELK COUNTY

H. F. Fleming's No. 1 Shered, NW cor. Sec. 16-29-9 .... 2,657-59 ft. show oil.

ELLIS COUNTY

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w ..... Rig.
Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w.. Shut down 1,290 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w .... Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w ..... Fishing 2,765 ft.

ELLSWORTH COUNTY

Tatlock et al's No. 1 Sackem, C SW SE Sec. 25-17-9w .. Shut down 3,228 ft.

FORD COUNTY

McNabb et al's No. 1 Fowler, C SE Sec. 26-27-22w .... Shut down 400 ft.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w .. Shut down 845 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w. Shut down 4,340 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w .. Rig.

GREENWOOD COUNTY

John Harwood's No. 1 Good, C SW NW NE, Sec. 36-25-9.. Rig.
Morrowery's No. 1 Denchfield, SE NW Sec. 12-27-9 .... Spudding.
Bundy, Smith & O'Neil's No. 1 Ford, NE NW Sec. 28-25-13 ..... Spudding.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12.. Drlg. 1,025 ft.

HARPER COUNTY

Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w ..... Shut down 1,330 ft.

HARVEY COUNTY

Liggett et al's No. 1 Regier, C SE NW SE Sec. 2-23-3w.. Drlg. 3,851 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w ..... Shut down 3,360 ft.

HODGEMAN COUNTY

Phillips Pet.'s No. 1 Hausman, NW NE Sec. 30-22-22w .. Shut down 5,034 ft.

JOHNSON COUNTY

Forrester et al's No. 1 Yazel, CEL SE SE, 18-12-22..... Drlg. 1,215 ft.

LINN COUNTY

Ferguson & Hiatt's No. 1 Carple, NE SE SW 22-21-22... Rig.

LYONS COUNTY

Aladdin & Phillips' No. 1 Ratcliff, SW cor. Sec. 29-20-10.. Rig on ground.
Sheedy et al's No. 1 Evers, C NE SE NE Sec. 4-21-10.... Drlg. 1,800 ft.
Sheedy et al's No. 1 Reese, SW SE Sec. 16-20-10 ..... Abandoned 2,401 ft.

MARION COUNTY

Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 .... Rig.

MARSHALL COUNTY

Swicker & Sincox's No. 1 Remple, C N half NW 22-4-9.. Drlg. 1,000 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 ..... Rig.

McPHERSON COUNTY

Harry Skelly et al's No. 1 Neufeldt, SE NE Sec. 19-21-3w ..... Rig.
Galt-Brown et al's No. 1 Zeitlow, C NE SE SE Sec. 7-17-1w ..... Drlg. 2,150 ft.
Dixie Oil Co.'s No. 1 Johnson, SW cor. Sec. 20-17-3w .... Drlg. 3,530 ft.
McCulloch Oil Co.'s No. 1 Cornelius, SW cor. Sec. 7-21-4.. Water 4,002-05 ft.; shut down.
Kansas Oil Co.'s No. 1 Otto, SW NW Sec. 21-20-1w .... Drlg. 3,597 ft.
Milmac's No. 1 Decker, NW cor. Sec. 11-20-3w ..... Fishing 1,500 ft.

MORTON COUNTY

Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-43.. Spudded; shut down.

MORRIS COUNTY

Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6 ..... Drlg. 2,115 ft.

NESS COUNTY

Clark's No. 1 Vaughn, SE SW Sec. 28-17-22w ..... Spudding.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w ..... Rig.

PAWNEE COUNTY

Prairie O. & G. Co.'s No. 1 Black, SW NE NE Sec. 11-20-18w ..... Drlg. 3,953 ft.

PRATT COUNTY

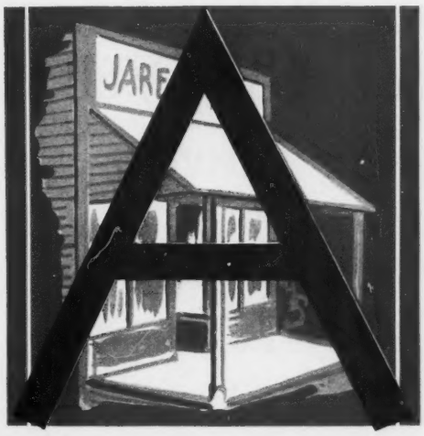
O'Haver & Jones' No. 1 Garacke, C NE SW Sec. 7-26-14w ..... Drlg. 4,295 ft.
Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w ..... Fishing 2,785 ft.

RENO COUNTY

C. A. Cheney and M. M. Valerius' No. 1 Stevens, C NE SE NE Sec. 6-26-7w ..... Shut down 1,095 ft.
Wilcox O. & G. Co.'s No. 1 McPheeters, SW NW Sec. 22-26-8w ..... Drlg. 3,955 ft.
Witt's No. 1 Olsen, C SE NW Sec. 14-22-6w ..... Shut down 3,565 ft.
Skelly Oil Co.'s No. 1 Birkett, NE NW Sec. 30-24-7w .... Wilcox sand 4,172-96 ft.; water; shut down; total depth 4,247 ft.

RICE COUNTY

Tatlock et al's No. 1 Ploog, C SW SE Sec. 32-18-9w .... Rig.



ASK ANY VETERAN OIL MAN

Only the highest quality hardened and tempered steel is used in making the JARECKI Pipe Vise. Its design is such that it will withstand the most severe service and abuse.

Branch Stores at all important places in the Oil Country

Why he prefers to deal with JARECKI.

.... He will tell you his preference is due to JARECKI'S integrity ... because its products, of the highest quality and built for maximum service, are designed by men who know oil industry conditions and because he finds it both economical and convenient.

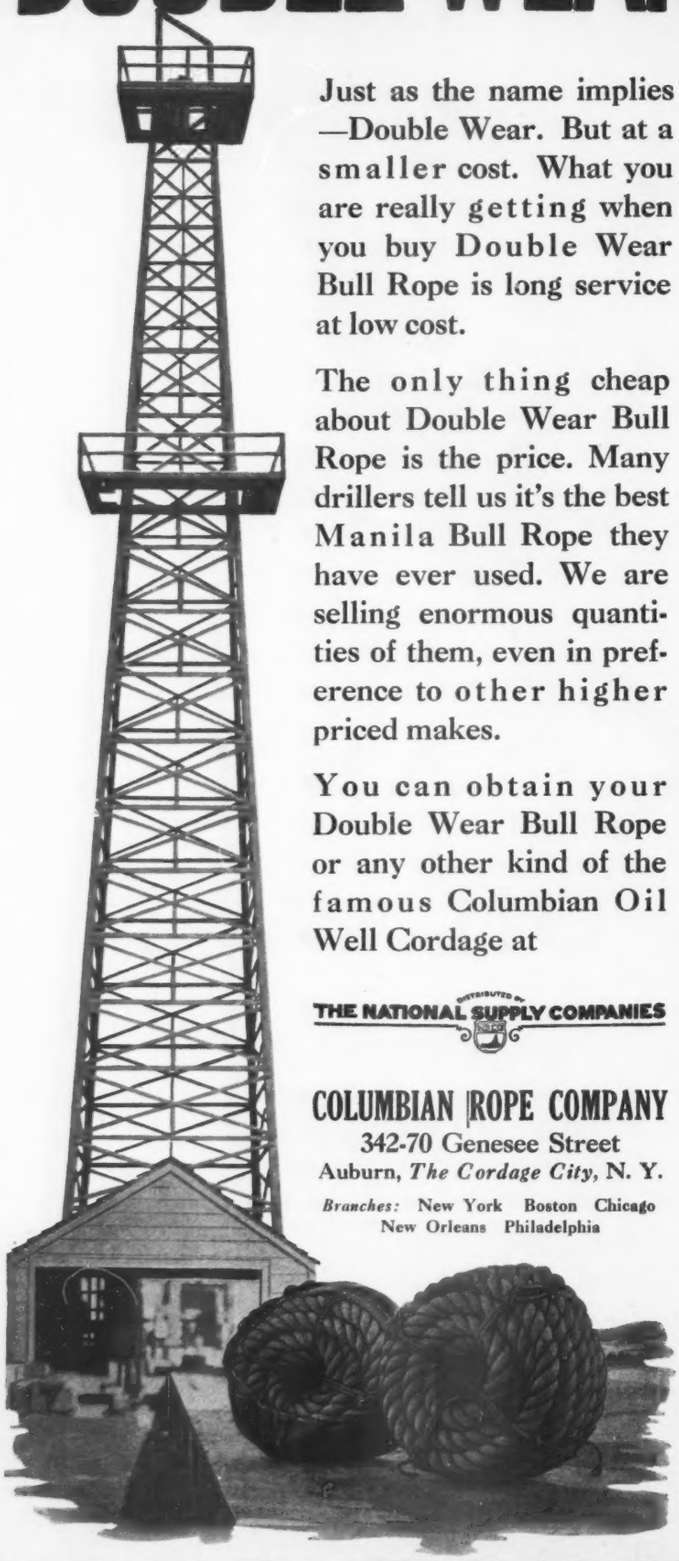
.... He'll tell you, also, that he values highly the comprehensive stock that JARECKI maintains at each of its oil field stores. For exactly the same reasons you, too, will prefer JARECKI.

Jarecki MANUFACTURING COMPANY

Home Office and Factory—Erie, Pa., U. S. A.

General Office—St. Louis, Mo. *District Offices*—Pittsburgh, Pa.; El Dorado, Kan.; Tulsa, Okla.; Newark, Ohio; Eastland and Dallas, Texas; Lawrenceville, Ill.

DOUBLE WEAR



Just as the name implies —Double Wear. But at a smaller cost. What you are really getting when you buy Double Wear Bull Rope is long service at low cost.

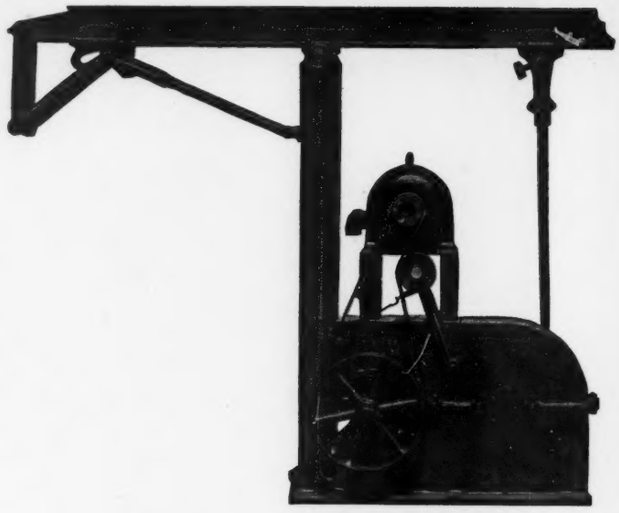
The only thing cheap about Double Wear Bull Rope is the price. Many drillers tell us it's the best Manila Bull Rope they have ever used. We are selling enormous quantities of them, even in preference to other higher priced makes.

You can obtain your Double Wear Bull Rope or any other kind of the famous Columbian Oil Well Cordage at

THE NATIONAL SUPPLY COMPANIES

COLUMBIAN ROPE COMPANY
342-70 Genesee Street
Auburn, *The Cordage City*, N. Y.
Branches: New York Boston Chicago
New Orleans Philadelphia

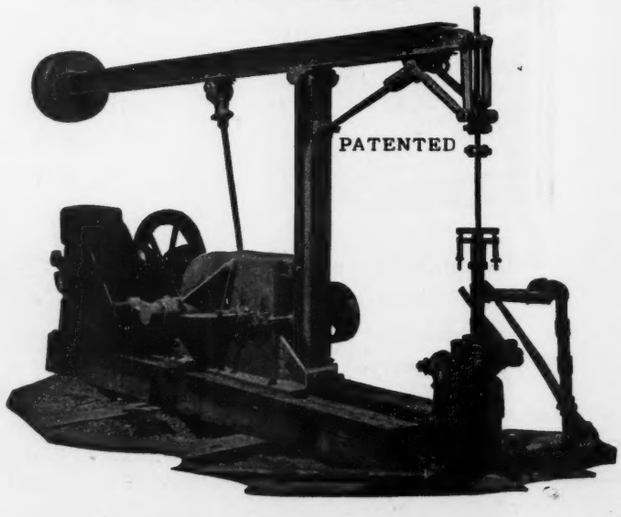
BULL ROPE

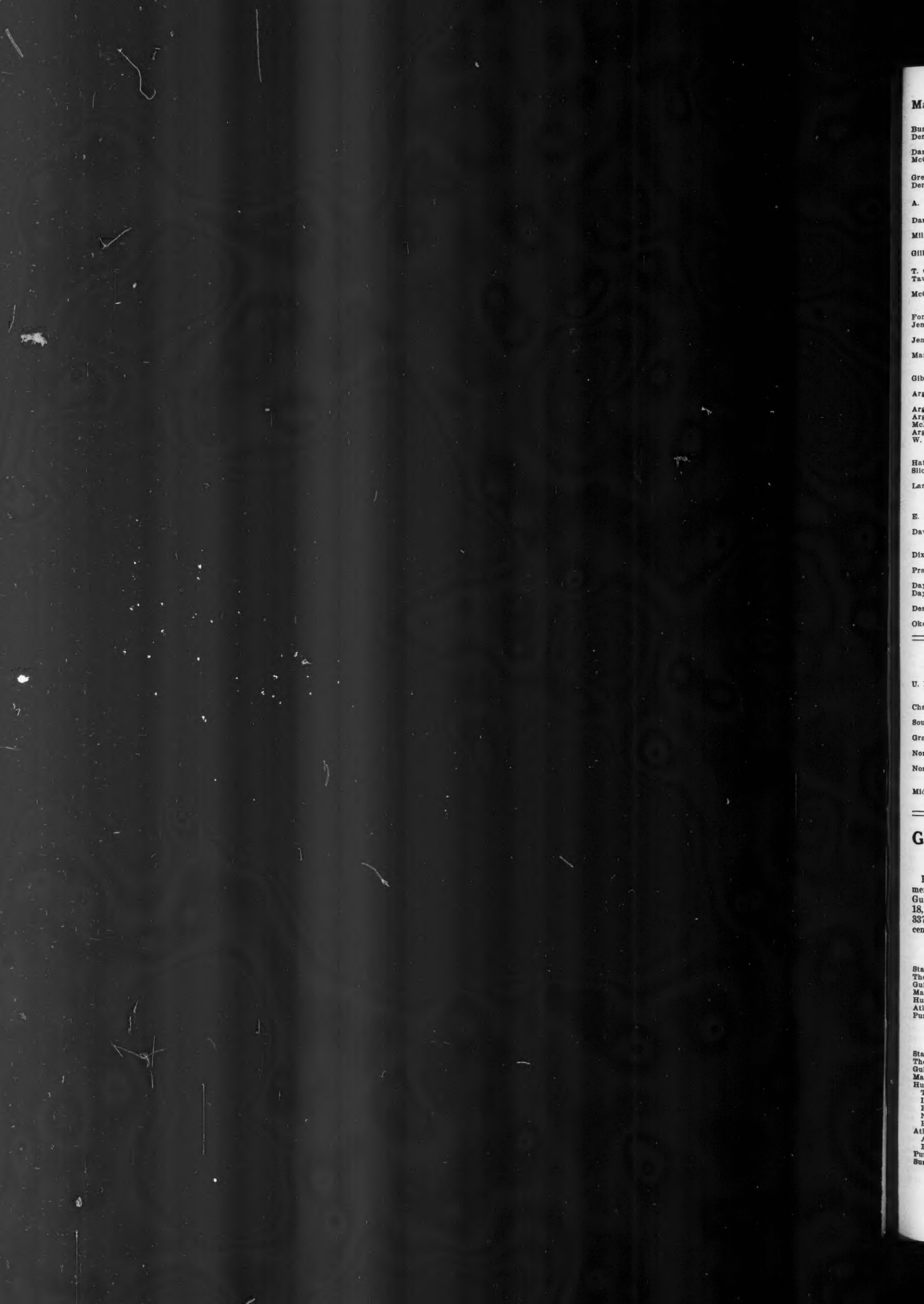


Mechanically Correct Oil Well Pumping Powers

Fabricated with "H" Beam for Sampson Post and Walking Beam.
Toggle made from steel casting.
Interchangeable bronze bearings throughout.
Cut gears running in oil.
Patented cam motion keeps polish rod in alignment at all times.
Can be used to pump from one to three wells.

Stork Engineering Company
Saginaw, Michigan, U. S. A.





Burgher's No. 1 Fair, C SE NE NE Sec. 14-21-10w ....Drlg. 2,868 ft.
Derby Oil Co.'s No. 1 Johnson, C NW NE SE Sec. 24-20-6w ....Drlg. 3,580 ft.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w ....Drlg. 3,334 ft.
McCullough et al's No. 1 Williams, C NE Sec. 35-20-8w..Drlg. 1,438 ft.

RILEY COUNTY

Grey et al's No. 1 Smith, NE SE Sec. 30-6-6 ....Shut down 1,970 ft.
Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e ..Shut down 2,245 ft.

ROOKS COUNTY

A. H. Kruger's No. 1 Steis, NW SE SW Sec. 12-9-16w...Shut down 570 ft.

RUSH COUNTY

Danciger Oil & Refining Co.'s No. 1 Nave, NW cor. Sec. 26-17-17w ....Total depth 3,606 ft.; shut down.
Milmac's No. 1 Mohr, C NW Sec. 11-18-16w ....Shut down 3,507 ft.

RUSSELL COUNTY

Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w ....Drlg. 640 ft.

SEDGWICK COUNTY

T. C. Johnson's No. 1 Petrie, SW SE Sec. 35-26-1w ....Rig.
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w ....Drlg. 750 ft.
McCullough Oil Co.'s No. 1 Buckles, NW cor. SE Sec. 3-28-1w ....Shut down 1,115 ft.

SHAWNEE COUNTY

Forrester et al's No. 1 Humer, NE cor. 14-11-16....Drlg. 1,350 ft.
Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 ....Shut down 985 ft.
Jenkins & Scott's No. 1 Haden, NE SE Sec. 3-12-14 ...Drlg. 1,040 ft.

SHERIDAN COUNTY

Mandalin O. & G. Co.'s No. 1 Unknown, C SE SW SW Sec. 27-7-26w ....Spudded; shut down.

STAFFORD COUNTY

Gibson's No. 1 Mueller, C SW Sec. 11-23-14w ....Fishing 3,765 ft.

STEVENS COUNTY

Argus Oil Co.'s No. 1 Armstrong, CNL S half NW Sec. 16-34-39w ....Drlg. 630 ft.
Argus Oil Co.'s No. 1 Parker, C SW Sec. 19-34-36w ....Drlg. 1,490 ft.
Argus Oil Co.'s No. 1 Smith, C SW Sec. 13-33-37w ....Drlg. 1,790 ft.
McNabb et al's No. 1 Ramey, C SW Sec. 1-33-38w ....Drlg. 1,925 ft.
Argus Gas Co.'s No. 1 Hobbe, C SE Sec. 17-32-37w ....Fishing 2,625 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ....Shut down 1,600 ft.

SUMNER COUNTY

Hatfield's No. 1 Dauber, NE cor. Sec. 18-30-1w ....Shut down 50 ft.
Slick et al's No. 1 Peasel, NW cor. Sec. 33-31-1w ....Chat 3,651 ft.; drilled to 3,668 ft.; pinched to 75 bbls. a day.
Lario O. & G. Co.'s No. 1 Osborne, NE SE Sec. 21-30-1w ....Chat 3,590-3,605 ft.; Silicious 4,-005 ft.; water; total depth 4,-011 ft.; abandoned.
E. K. Carey and Laredo Oil Co.'s No. 1 Welsch, SW SE Sec. 9-34-1e ....Drlg. 3,895 ft.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w ....Rig.

TREGO COUNTY

Dixie and Amerada's No. 1 Reitmayer, C NE NE Sec. 19-14-21w ....Drlg. 3,522 ft.
Prairie Oil & Gas Co.'s No. 1 Kutina, C NE SW NE Sec. 29-15-21w ....Abandoned 4,383-84 ft.; water.
Day et al's No. 1 Gugler, SW NE NE Sec. 36-12-21w ..Shut down 50 ft.
Day et al's No. 1 Unknown, NE NW SW Sec. 2-11-21w..Shut down 3,865 ft.

WOODSON COUNTY

Derby & Spencer's No. 1 Kingon, CNL SE NW Sec. 29-23-15 ....Rig.
Oko Oil Co.'s No. 1 Hougland, SW NE NE Sec. 2-24-14 ..1,647-57 ft.; 35 bbls. completed.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w ....Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w ....U.R. 5-in. csg.; T.D. 4,265 ft.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w ....Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w ..Shut down 3,250 ft.

RICHARDSON COUNTY

Norton et al's No. 1 Hauser, NE cor. Sec. 26-1-14 ....Location.

ROCK COUNTY

North Central Dev. & Drlg. Co.'s No. 1 Leonard, SE cor. NE Sec. 14-32-18w ....Drlg. 900 ft.

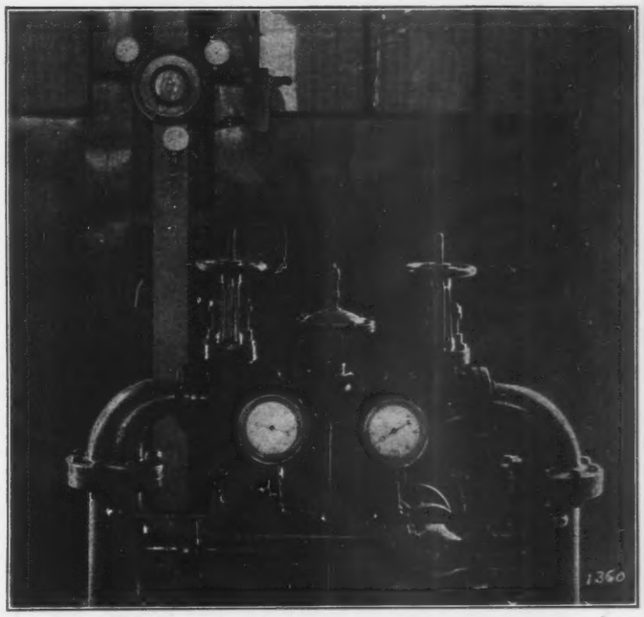
WEBSTER COUNTY

Mid-Kansas Exploration Co.'s No. 1 Platt, C SE one-half Sec. 3-1n-11w ....Shut down 555 ft.

GULF PORT SHIPMENTS SHOW SLIGHT DECREASE IN JANUARY

HOUSTON, Tex., Mar. 22.—Shipments of crude and refined products from Gulf Coast ports during January totaled 18,179,276.93 bbls., a slight decrease of 337,414.67 bbls. from shipments of December, according to figures just compiled here. There was a substantial increase in liftings of refined products chiefly for coastwise movement but movement of crude fell off sharply, offsetting gains of refined products. Shipments by companies were:

Company, port—	Coastwise December	Coastwise January	Export December	Export January
REFINED				
Standard Oil Co. (La.), Baton Rouge	855,764.00	1,307,606.00	11,727,987.00	864,453.00
The Texas Company, Port Arthur	1,036,324.00	1,061,505.00	535,398.00	430,136.00
Gulf Refining Co., Port Arthur	2,192,518.53	2,765,394.44	65,713.77	96,925.37
Magnolia Pet. Co., Beaumont	1,063,374.19	1,432,234.97	.....	.....
Humble O. & R. Co., Baytown	1,740,052.33	1,281,376.10	1,818,656.00	1,957,804.18
Atlantic Oil Prod. Co., Atreco	203,255.43	162,854.90	.....	.....
Pure Oil Co., Smiths Bluff	553,084.80	446,960.35	.....	.....
Total refined	7,594,373.28	8,457,931.76	3,147,754.77	3,349,318.55
CRUDE				
Standard Oil Co. (La.), Baton Rouge	464,876.00	359,192.00	54,070.00	53,404.00
The Texas Company, Port Arthur	.....	.....	30,293.00	.....
Gulf Refining Co., Port Arthur	281,726.12	181,313.13	.....	.....
Magnolia Pet. Co., Beaumont	306,246.92	858,583.43	.....	.....
Humble O. & R. Co.:				
Texas City	800,549.00	673,099.00	100,663.00	.....
Ingleside	112,987.00	209,330.00	.....	.....
Baytown	533,202.00	433,627.00	.....	.....
Neches	15,607.00	.....	.....	.....
Harbor Island	2,100,894.00	1,659,180.00	73,994.00	.....
Atlantic Oil Prod. Co.:				
Atreco	887,571.76	811,453.44	.....	.....
Beaumont	143,899.56	128,016.57	.....	.....
Pure Oil Co., Smiths Bluff	428,952.31	336,584.05	.....	.....
Sun Oil Co., Sabine Pass	839,032.00	668,244.00	.....	.....
Total crude	7,415,543.57	6,318,622.62	259,020.00	53,404.00
Total shipments	15,109,916.85	14,776,554.38	3,406,774.77	3,402,722.55



Tycos Steam Boiler Gas Fuel Governor (Pilot Operated), maintaining constant steam header pressures on natural gasoline plants by controlling the gas fuel supply to a battery of eight boilers.

Tycos Steam Boiler Gas Fuel Governor (Pilot Operated)

THIS installation insures constant steam pressures under varying load conditions by properly regulating the gas fuel supply to the burners. Full steam pressures are maintained under extreme operating conditions, thus insuring a high efficiency and consistent operation of the boiler plant.

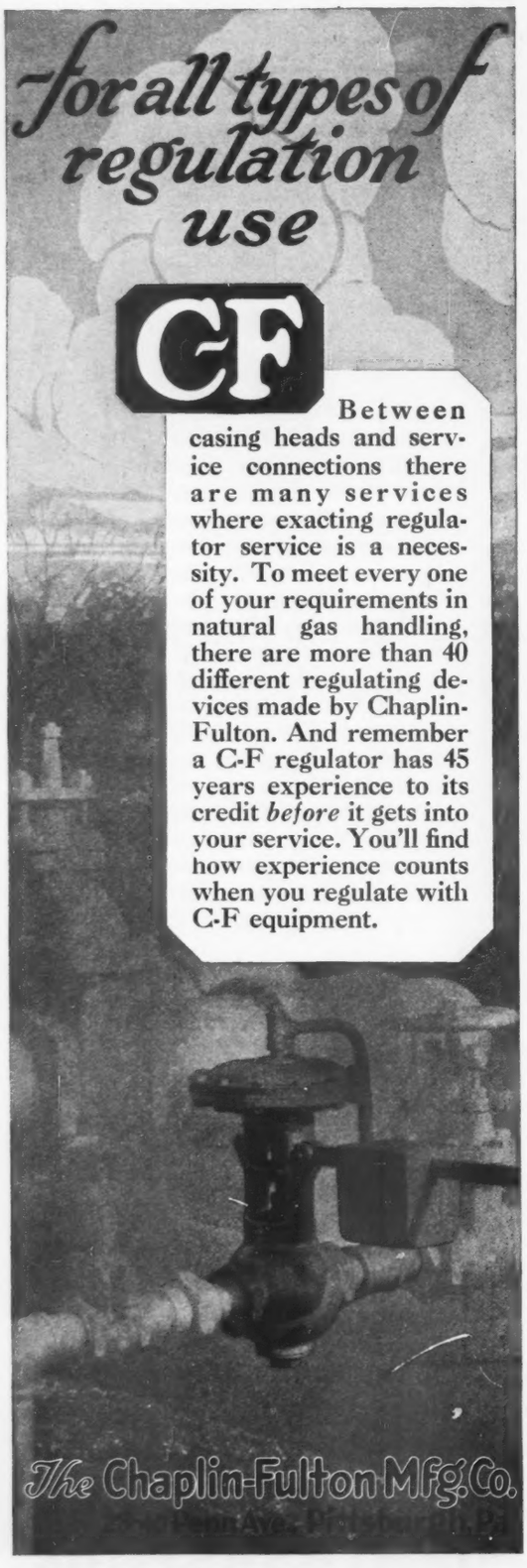
Once adjusted to the desired steam pressures, the *Tycos* Regulator will maintain such pressures without adjustment or further attention from the engineer. Having a high degree of sensitivity its response to steam pressure changes is immediate. Its operation being essentially throttling, only the exact required amount of gas is admitted to the burner at all times.

The *Tycos* Steam Boiler Fuel Governor may be applied to a single boiler, or with a control valve and the gas header, to a battery of boilers. When applied to a battery, a boiler can be cut in or taken out without any variation in steam header pressure, due to the action of the regulator and compensating for such changes.

Write for additional information on this installation and others for the oil and gas industry.

Taylor Instrument Companies
ROCHESTER, N. Y., U. S. A.
Canadian Plant, *Tycos* Bldg., Toronto
Manufacturing Distributors in Great Britain, Short and Mason, Ltd., London.

Tycos
Temperature Instruments
Indicating Recording Controlling


for all types of regulation use
CF
Between casing heads and service connections there are many services where exacting regulator service is a necessity. To meet every one of your requirements in natural gas handling, there are more than 40 different regulating devices made by Chaplin-Fulton. And remember a C-F regulator has 45 years experience to its credit before it gets into your service. You'll find how experience counts when you regulate with C-F equipment.
The Chaplin-Fulton Mfg. Co.

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

First Reports for Week Ending March 5, 1920

Carson County

Cockrell-McIlroy Oil Co.'s No. 1 W. F. Simms, 330 feet north and west of the southeast corner of the east 140 acres of the north 160 acres of the south 320 acres of Section 11, Block 7, I.&G.N. Survey. Phillips Petroleum Co.'s No. 1-A C. R. Garner and others, 430 feet north and 330 feet east of the southwest corner of the southwest of Section 114, Block 4, I.&G.N. Survey.

Gray County

Gulf Production Co.'s No. 5 P. A. Worley and others-A, 1,650 feet north and 330 feet west of the southeast corner of the southwest of Section 36, Block 3, I.&G.N. Survey. Cockrell-McIlroy Oil Co.'s No. 1 W. M. Castleberry, 330 feet north and west of the southeast corner of the southeast of Section 126, Block 3, I.&G.N. Survey. Danciger Oil & Refining Co. and Champlin Refining Co.'s No. 5-A Cook-Faulkner, 330 feet south and 682 feet west of the NE corner of their 120-acre lease out of Section 30, Block B-2, H.&G.N. Survey. Magnolia Petroleum Co.'s No. 6 J. E. Wright, 330 feet south and 990 feet west of the northeast corner of the south half of the southwest of Section 13, Block 3, I.&G.N. Survey. Magnolia Petroleum Co.'s No. 7 J. E. Wright, 330 feet south and 990 feet east of the northwest corner of the south half of the southwest of Section 13, Block 3, I.&G.N. Survey.

Hutchinson County

Smith & McDaniel's No. 1 H. C. Pitcher and others-A, 330 feet north and west of the southeast corner of the east half of the southwest of Section 19, Block M-21, T.C.R.R. Survey.

Wheeler County

Gibson Oil Corp.'s No. 9 W. E. Bentley, 1,320 feet north and 330 feet east of the southwest corner of the southeast of Section 42, Block 24, H.&G.N. Survey. Murchison & Fain's No. 2 W. L. Cooper, at the center of the southeast of the northwest of Section 80, Block 23, H.& G.N. Survey. Wischkamper and others' No. 3 J. W. Curry, at the center of the northeast of the southwest of Section 53, Block 23, H.&G.N. Survey.

NORTH CENTRAL AND WEST TEXAS

Week Ending March 5

Archer County

S. H. Keoughen's No. 1 J. H. Turbeville, 150 feet north and east of the southwest corner of the northwest of Section 147, R. Carson Survey. Pace & Bullington's No. 1 L. F. Wilson, 150 feet south and 450 feet east of the northwest corner of Lot 3, Section 100, A.T.N.C.L. Survey. Van Alex Oil Syndicate's No. 1 J. H. White-B (Phillips), 200 feet south and 150 feet east of the northwest corner of Lot 11, Section 34, A.T.N.C.L. Survey. Butler & Wise's No. 1 A. M. Kunkel, 600 feet north and 150 feet west of the southeast corner of the northwest of the southeast of Section 3, B.B.B.&C. Survey A-51. Cullum & Alexander's No. 1 J. T. Richardson, 150 feet north and 1,740 feet west of the southeast corner of the J. T. Richardson 58.1-acre tract out of the B.S.&F. Survey No. 2, A-1,205. Flowers & Barkley's No. 1 M. E. Rogers, 1,804 feet south and 1,470 feet east of the northwest corner of Section 1,596, T.E.&L. Survey. Lawson-Duke and others' No. 2 J. A. Young, 150 feet north and 450 feet west of the southeast corner of the east half of the northeast of Section 2,426, T.E.&L. Survey.

M. & V. Oil Co.'s No. 3 H. Kunkel, 150 north and west of the southeast corner of the north 40 acres of the west 80 acres of the H. Kunkel 252-acre tract and located in the G. W. Stell Survey A-381. Pandem Oil Corp.'s No. 6 J. A. Young-D, 150 feet south and 750 feet west of the northeast corner of their lease "D" out of Section 2,426, T.E.&L. Survey. Same corporation's No. 7 J. A. Young-D, 150 feet north and 750 feet west of the southeast corner of their lease "D" out of Section 2,426, T.E.&L. Survey. Perkins & Cullum's No. 2 J. T. Richardson-B, 150 feet south and 450 feet west of the northeast corner of the east 10 acres of the south 20 acres of the west 40 acres of Section 14, South Anderson Ranch Subdivision.. Shell Petroleum Corp.'s No. 2 W. R. Duprest, 150 feet north and 1,044 feet west of the southeast corner of the east 60 acres of the north 110 acres of Section 2,490, T.E.&L. Survey. Sun Oil Co.'s No. 5 H. E. Brown, 1,294 feet north and 2,094 feet west of the southeast corner of the H. E. Brown 150-acre tract and located in Section 6, B.B.B.&C. Survey, A-826. United Production Co.'s No. 5 A. M. Kunkel and others, 1,650 feet north and 150 feet east of the southwest corner of their 63.8-acre lease out of the G. W. Stell Survey A-381. J. R. Williams and others' No. 4 J. A. Kunkel, 750 feet south and 450 feet east of the northwest corner of the west 40 acres of the east 60 acres of Section 4, Thomas McCoy Survey A-269.

Baylor County

Simms Petroleum Co. and others' No. 1 A. J. Kulhanek, 150 feet north and 1,125 feet west of the southeast corner of the A. J. Kulhanek 160-acre tract out of Section 2,430, T.E.&L. Survey.

Brown County

Phillips Petroleum Co.'s No. 1 T. S. Williams-B, 1,800 feet south and 2,350 feet west of the northeast corner of the John Beck Survey No. 792. E. L. Smith Oil Co.'s No. 1 C. F. Holt, 660 feet north and 150 feet east of the most westerly southwest corner of the C. F. Holt tract out of the J. Padillo Survey No. 646. Paramount Oil Royalty Corp. and others' No. 2 R. L. Brooks, 3,075 feet north and 1,500 feet west of the southeast corner of the J. Hernandez Survey No. 350, A-406. Same corporation's No. 1 L. A. McDonald, 600 feet south and 550 feet west of the southwest corner of the E.T.R.R. Survey No. 7 and located in the J. Robinett Survey A-775.

Callahan County

Humble Oil & Refining Co.'s No. 1 I. N. Jackson-G, 2,649 feet south and 200 feet west of the northeast corner of Section 5, T.&N.O. Survey.

Clay County

Reno Oil Co.'s No. 1 Ben Nutter, 150 feet south and east of the northwest corner of Section 51, Orange County School Land, A-368.

Coleman County

Eastland Oil Co. and others' No. 1 O. T. Williams, 150 feet north and east of the southwest corner of the east 80 acres of Lot 7, W. Farris Survey No. 279. Mattocks and others' No. 1 W. P. Fletcher, 750 feet north and 1,350 feet east of the southwest corner of Lot 3, W. Farris Survey No. 279.

Cooke County

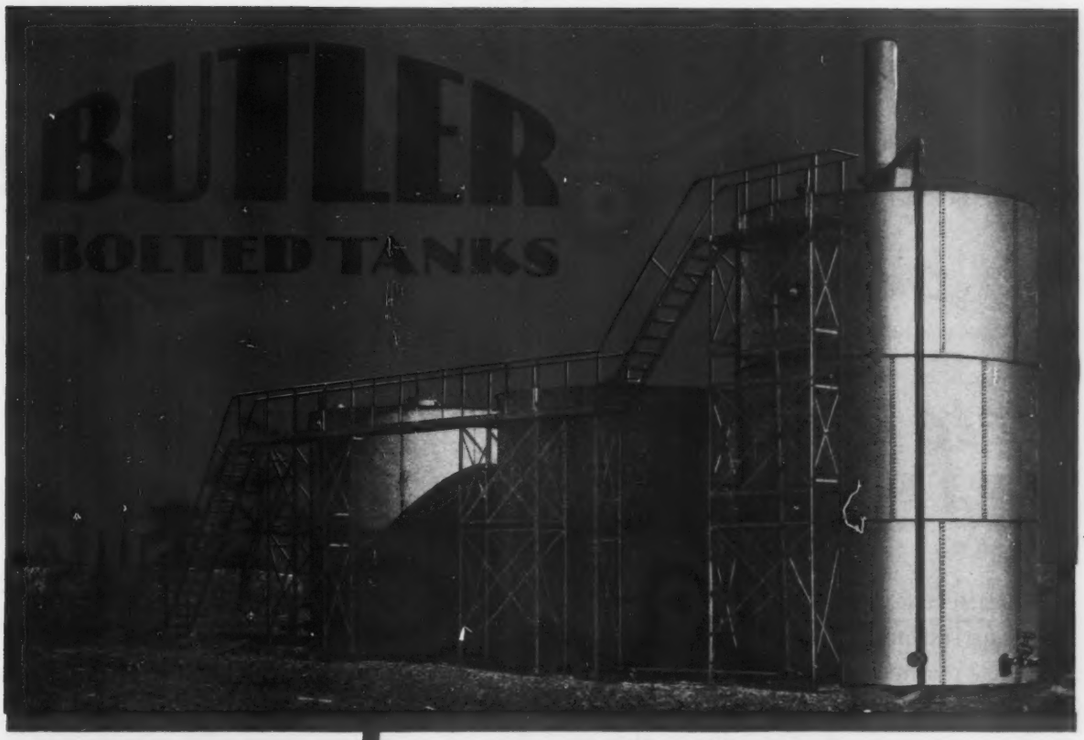
Sun Oil Co.'s No. 1 J. W. Mount, 150 feet south and 1,170 feet west of the northeast corner of Section 11, S.P.R.R. Survey A-976.

Crane County

T. B. Cranfill and others' No. 1 J. B. Tubb, 2,310 feet south and 330 feet west of the northeast corner of Section 8, Block B-27, School Land.

Eastland County

Phillips Petroleum Co. and others' No. 1 G. N. Stracener, 150 feet south and 850 feet west of the northeast corner of Section 11, Block 1, H.&T.C. Survey. George Christie's No. 1 L. M. Clark, 150 feet north and east of the southwest corner of the southeast of the northeast of Section 9, Block 2, E.T.R.R. Survey. S. A. Hopkins and others' No. 1 W. H. Jones, 784 feet south and 150 feet east of the northwest corner of the east 80 acres of the south half of Section 43, Block 4, H.&T.C. Survey. S. A. Hopkins and others' No. 1 Mrs. C. B. Lewis heirs, 186 feet south and 371 feet west of the northeast corner of the west 240 acres of the south half of Section 43, Block 4, H.& T.C. Survey. Lone Star Gas Co.'s No. 1



BUTLER FIELD TANK SERVICE

Drane-Humphrey Co., at San Angelo, Ft. Worth, Big Spring, Pyote, Best and McCamey, Texas; and Hobbs, N. M.

Keyes-Butler Tank Co., of Casper and Cody, Wyoming.

Drane Tank Co., at Tulsa, Holdenville, Seminole, Hallett and Shawnee, Oklahoma; Eldorado, Madison, Wichita and Valley Center, Kansas.

Muskegon Boiler Works, Muskegon, Michigan.

Gulf Coast Tank Company, 1612 Moffit St., Houston, Luling and Refugio, Texas, V. P. Hughes, Prop.

Thomas Moran at Oil City, Shreveport, New Iberia, Lake Charles, Zwolle and Houma, Louisiana.

M. A. Trimmer, at Blackwell and Lowell, Oklahoma.

Butler A. P. I. specification Bolted Steel Tanks carry the official monogram reproduced here.

STEEL BUTLER PRODUCTS

This and the Butler monogram are a double pledge of the utmost value in Bolted Steel Tanks.

CADMIUM PLATED STAIRWAYS AND RUNWAYS.....

PORTABLE . . . DURABLE

THERE is no place in the well ordered lease picture any more for unsafe and unsightly tank stairways and runways. Along with safety and trim appearance, there is genuine economy in equipping with Butler Steel Stairways and Runways electroplated with Cadmium—the rustless and non-peeling metallic plating. It is the substantial kind of economy which comes from long wear, low maintenance and portability.

Steel Bridging for Soft Oil Field Roads is another new Butler product on which the Butler Oil field service organization is prepared to render the same dependable service for which it is noted on Butler bolted and welded field tanks. Call a Butler field office or write headquarters for new equipment or dependable erection, cutting down and re-erection service.

BUTLER MANUFACTURING COMPANY

1244 Eastern Avenue, KANSAS CITY, MO.

944 6th Avenue S. E., MINNEAPOLIS, MINN.

McEVERLAST
Pipe Line Protection

Includes *Complete* Field Inspection

For maximum effectiveness, even the best pipe line coating must be properly applied. That's why McEverlast maintains a complete inspection service for the benefit of its customers. Not only do we have a man in the field during the treatment of the line but we offer consultation service on each particular job.

The topography and drainage conditions of the terrain in which the line is to be laid should be determined. Soil examinations should be made to determine the corrosive index. With these facts in hand we recommend the amount of protection necessary to meet the particular needs. Thus, you cut cost to the bone by avoiding excessive protection in mild soils or an insufficient amount where conditions are severe.

This inspection and consultation service is an important part of every pipe-line job on which McEverlast protection is used. It will help you materially in keeping down your maintenance costs. Write today for informative booklet on pipe-line protection.

McEVERLAST, INC.
[1930]

111 West Seventh St., Los Angeles, Calif.

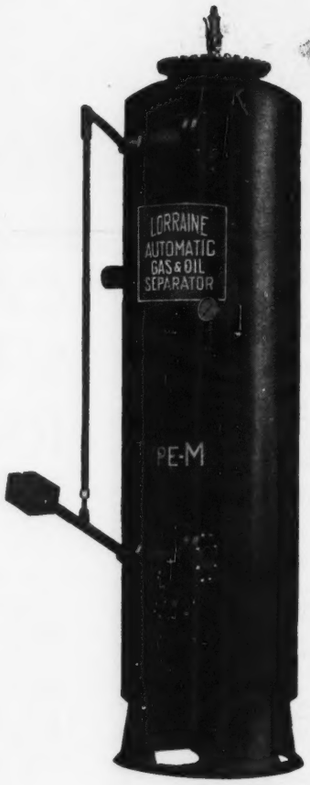
35 E. Wacker Dr., Chicago, Ill. | 1314 Magnolia Bldg., Dallas, Tex. | 1754 Graybar Bldg., New York, N. Y.

Offices in principal cities.

THE UNANIMOUS APPROVAL OF THE BIGGEST OPERATORS MAKES

LORRAINE

THE OUTSTANDING OIL AND GAS SEPARATOR IN THE PETROLEUM INDUSTRY



For quality and efficiency, Lorraine Automatic Gas and Oil Separators stand in a class by themselves — they have proved their superiority in nearly every oil field in the world, under every condition of service.

THE LORRAINE Type "M75"

trap developed especially to handle a large quantity of gas with only an ordinary volume of oil.

Capacity:
2,000 barrels of oil and 8,000,000 cubic feet of gas.

Working Pressure:
0 to 75 pounds.

Test Pressure:
125 pounds.

Oil Intake: 4-inch.

Oil Outlet: 4-inch.

Gas Outlet: 6-inch.

We shall be glad to send you specifications and data upon request.

THE LORRAINE CORP.
MANUFACTURERS AND DISTRIBUTORS
OIL WELL SPECIALTIES
115th and Alameda Streets
Los Angeles, Calif.

Mid-Continent Distributors:
The National Tank Co.,
Tulsa, Oklahoma

J. Penn, 400 feet north and east of the southwest corner of Section 468, S.P.R.R. Survey.

Ector County

Cosden Oil Co.'s No. 2 University-A, 1,650 feet south and 440 feet west of the northeast corner of Section 1, Block 35, University Land. Gibson & Johnson's No. 1 John Scharbauer, 990 feet south and 330 feet west of the northeast corner of Section 4, Block B-15, School Land. Humble Oil & Refining Co. and other's No. 5 Kloh-Rumsey-D, 1,674 feet south and 440 feet east of the northwest corner of Section 7, Block 44, Township 3s, T.&P. Survey. Humble Oil & Refining Co. and others' No. 6 Kloh-Rumsey-D, 1,014 feet south and 440 feet east of the northwest corner of Section 7, Block 44, Township 3s, T.&P. Survey. Shell Petroleum Corp.'s No. 1 E. J. Jones, 330 feet north and 440 feet west of the southeast corner of Section 6, Block 44, Township 3s, T.&P. Survey. Texas Pacific Coal & Oil Co.'s No. 1 B. W. McKenzie, 1,650 feet north and 330 feet west of the southeast corner of Section 28, Block 45, Township 2s, T.&P. Survey. H. F. Wurtz's No. 1 E. A. Ibbetson and others, 330 feet south and 2,310 feet east of the northwest corner of Section 16, Block 46, Township 3s, G.&M. Survey.

Glasscock County

The California Co.'s No. 1 J. W. Baker, 2,310 feet north and 990 feet east of the southwest corner of Section 23-2s-33. F. H. E. Oil Co.'s No. 2 D. Roberts-C, 2,440 feet north and east of the southwest corner of Section 156, Block 29, W.&N.W. R.R. Survey.

Grayson County

F. H. E. Oil Co.'s No. 1 A. J. Henderson, 1,228 feet south and 972 feet west of the northeast corner of the west 80 acres of the B. Holder Survey A-614.

Hood County

Hood Oil & Gas Co.'s No. 1 W. E. Dabney, 500 feet south and east of the northwest corner of the S. Chambers Survey (3-2189). Lasater and others' No. 1 Stewart, 150 feet north and 660 feet west of the southeast corner of the J. R. Sykes Survey (S-269).

Irion County

Baker & Hodges and others' No. 1 F. Tankersley, 750 feet south and 170 feet east of the northwest corner of Section 23, G.C.&S.F. Survey.

Jack County

Panhandle Refining Co.'s No. 5 Eaton & Daniels, 510 feet north and 550 feet west of the southeast corner of the Eaton & Daniels 150-acre tract out of the I. Hughson Survey A-256.

Palo Pinto County

W. H. Pennington's No. 1 W. H. Pennington, 450 feet north and 150 feet west of the most easterly southeast corner of the S. F. Harding Survey A-221.

Pecos County

Hayes and others' No. 1 A. N. Lea, at the center of the northwest of the northeast of Section 9, Block 106, T.&St.L. Survey. Rector Oil Co.'s No. 1 I. J. Young, 330 feet south and 1,650 feet east of the southwest corner of Section 26, Block 9, H.&G.N. Survey, and located in Section 4, Block 3, H.&T.C. Survey.

Shackelford County

Douglas & Earl's No. 1 B. Walker, 150 feet southeast of the northwest line and 450 feet southwest of the northeast line of Section 376, T.E.&L. Survey. Gibson & Johnson's No. 2 J. J. Simpson, 2,800 feet south and 1,100 feet west of the northeast corner of Section 13, H.&T.C. Survey. W. Harris' No. 1 W. M. Parrish, 1,000 feet north and 150 feet west of the southeast corner of the southwest of Section 3, Bayland Orphan Asylum Land. Humble Oil & Refining Co.'s No. 1 L. Ackers-B, 150 feet south and 450 feet east of the northwest corner of Section 35, Block 13, T.&P. Survey. Roeser & Pendleton's No. 89 W. I. Cook-A, 727 feet north and 550 feet west of the southeast corner of the northwest of Section 60, Block 10, E.T.R.R. Survey.

Stephens County

Close Oil Co.'s No. 2 R. A. Elliott, 600 feet south and 2,000 feet west of the northeast corner of Section 27, Orphan Asylum Land. Clover Leaf Mining Co.'s No. 1 R. L. Glasscock, 50 feet south and 250 feet west of the northeast corner of the southeast of the southwest of Section 80, Block 4, T.&P. Survey. Lone Star Gas Co.'s No. 1 H. J. Abrams, 315 feet north and 470 feet east of the southwest corner of Section 3, Block C, T.&P. Survey. Same company's No. 4 I. A. Calloway, 475 feet south and 450 feet west of the northeast corner of the I. A. Calloway 160-acre tract out of Section 2, Block C, S.P.R.R. Survey. Texas Pacific Coal & Oil Co.'s No. 1 B. F. Coody, 300 feet north and 1,000 feet west of the southeast corner of Section 44, Block 4, T.&P. Survey.

Throckmorton County

P. K. Deats' No. 1 E. R. Singleton, 200 feet south and 1,883 feet east of the northwest corner of Section 2,357, T.E.&L. Survey.

Ward County

Gulf Production Co.'s No. 8 G. W. O'Brien and others, 330 feet north and west of the southeast corner of Section 18, Block F, G.&M.M.B.&A. Survey. Same company's No. 4 Hutchings Stock Association Tr-A, 330 feet north and east of the southwest corner of the southeast of Section 7, Block O, G.&M.M.B.&A. Survey.

Wichita County

Hi-Land Oil Co.'s No. 4 R. L. Crudup, 937 feet south and 750 feet east of the northwest corner of Section 10, Denton County School Land, Lease 4, A-417. United Production Co.'s No. 12 W. L. Hodges-A, 450 feet south and 200 feet east of the northwest corner of their 40-acre lease "A" out of the H.T.&B. Survey No. 1, A-139.

Wilbarger County

Dixie Oil Co.'s No. 1 W. T. Waggoner-H, 150 feet south and 205 feet west of the northeast corner of the J. Bennett Survey A-572.

Young County

Bridwell Oil Co.'s No. 1 J. A. Leberman, 150 feet north and east of the southwest corner of the east 40 acres of the north 80 acres of the south 120 acres of Section 151, T.E.&L. Survey. F. Butler's No. 1 O. Andrews, 150 feet south and east of the northwest corner of the south 30 acres of the east 200 acres of Section 150, T.E.&L. Survey. G. B. Chandler's No. 1 J. P. Mullinax, 450 feet north and 150 feet west of the southeast corner of the south 40 acres of the west 120 acres of Section 163, T.E.&L. Survey. Allen & Crowell's No. 1 W. Alexander, 1,050 feet north and 150 feet west of the southeast corner of the W. Alexander 158-acre tract out of Section 82, T.E.&L. Survey. N. D. Goldsmith's No. 1 O. B. Stowe, 150 feet south and east of the northwest corner of the east 40 acres of the south 60 acres of the O. B. Stowe 160-acre tract out of Section 2, J. Poitevent Survey A-2,125. Halmack Oil Co. and others' No. 1 J. D. Carpenter, 450 feet south and 150 feet east of the northwest corner of the north 40 acres of the southwest of Section 164, T.E.&L. Survey. Independent Oil & Gas Co.'s No. 1 C. J. Taack, 150 feet north and west of the southeast corner of the west 20 acres of the south 40 acres of the northwest of Section 263, T.E.&L. Survey. Junker & Perkins' No. 1 H. Hausler, 150 feet north and east of the southwest corner of the north 50 acres of the H. Hausler 110-acre tract out of Section 1, J. Poitevent Survey A-226. E. B. Lawson's No. 4 J. A. Leberman, 150 feet south and 780 feet east of the northwest corner of the south 40 acres of Section 151, T.E.&L. Survey. C. B. Long's No. 2 H. Hausler and others, 150 feet south and west of the northeast corner of the northeast of the southwest of Section 2, J. Poitevent Survey A-1,878. R. L. Lowery and others' No. 3-A J. A. Atchley, 150 feet south and 130 feet west of the northeast corner of the south half of Section 226, T.E.&L. Survey. Madden & Hunt's No. 4 O. Deitrich, 150 feet south and 1,050 feet east of the northwest corner of the north 15 acres of the O. Deitrich 150-acre tract out of the G. W. Stell Survey A-256. Mitchell & Cooper's No. 1 J. R. Wilson, 150 feet north and 450 feet east of the southwest corner of the south 40 acres of the east half of Section 162, T.E.&L. Survey. Mitchell & Palmer's No. 1 C. West, 550 feet north and 150 feet east of the southwest corner of the west 40 acres of

THE ANSWER
to the drillers' demands!

It is said an "Ideal" is never obtained—that it is something mythical—too perfect to be within reach of mankind.

Yet the drillers' ideal may be reached with a bit made from ASCO Well Bit Tool Steel—steel which causes the driller to cast aside worry about rock formations.

ASCO Well Bit Tool Steel is made to stand the gaff under the most severe strains, thereby giving the assurance of continuous drilling without fear of tool or labor loss.

When the going gets tough, try a bit made from ASCO Well Bit Tool Steel—watch the results—note the difference.

THE ANDREWS STEEL CO.
NEWPORT ASCO KENTUCKY

AYER & LORD TIE CO.
INCORPORATED
Railway Exchange
CHICAGO

Railroad Cross Ties — Timber Products — Lumber — Poles

— Piling — Fence Posts
Wood Treatments and Preservation

PLANTS
Carbondale, Ill., Grenada, Miss., Louisville, Ky.,
North Little Rock, Ark., Montgomery, Ala.;
Marine Ways-Paducah, Ky.

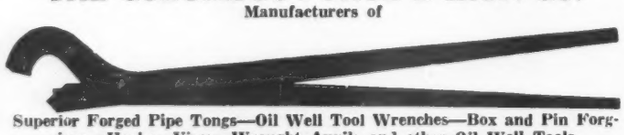
"CREOSOTE OIL PREVENTS DECAY"

PLATE WORK TANKS

For any form of plate work, or on any tanks for oil and gas storage, get your quotations from us. Major producers and distributors have found our production and engineering facilities mean SERVICE. Write us.

Birmingham Tank Co.
Main Office & Plant: BIRMINGHAM, Ala.
Atlanta New Orleans Tampa
New York, 117 Liberty St. *Jackson, Miss.,* Standard Life Bldg.

THE COLUMBUS FORGE & IRON CO.
Manufacturers of



Superior Forged Pipe Tongs—Oil Well Tool Wrenches—Box and Pin Forgings—Hooks—Vises—Wrought Anvils and other Oil Well Tools

Our Tongs are made of the best material—they will grip the pipe and stand the test for strength.
In our finely equipped Drop Forging Department we manufacture forgings of the better quality from as small as ½ ounce up to 10,000 pounds.
Write us for your requirements.

COLUMBUS, OHIO

Heat Exchangers

THE M. W. KELLOGG CO.
225 Broadway - - New York

Tulsa, Okla. . . . . Philtower Bldg.
Los Angeles, Cal. . . . . 1031 So. Broadway

the south 80 acres of the west half of Section 239, T.E.&L. Survey. Nimrod Oil Co. and others' No. 1 H. N. Tucker, 750 feet north and 150 feet west of the southeast corner of the south 40 acres of the H. N. Tucker 109-acre tract out of Section 167, T.E.&L. Survey. Perkins & Butler and others' No. 3 J. W. Whitt, 150 feet south and west of the northeast corner of the east 23 acres of the south 40 acres of the west 74 acres of the south 134 acres of Section 160, T.E.&L. Survey.

Perkins & Cullum's No. 1 R. H. Rachuig, 450 feet north and 638 feet east of the southwest corner of the west 40 acres of the south 134 acres of the northwest of Section 4, B.B.B.&C. Survey A-1,838. E. H. Sharp and others' No. 1 T. T. Doyle, 150 feet north and east of the southwest corner of the south 41 acres of the north 81 acres of the west half of Section 184, T.E.&L. E. H. Sharp and others' No. 2 W. E. Edwards, 150 feet south and 1,122 feet east of the northwest corner of the north 20 acres of the west 60 acres of the north half of Section 71, T.E.&L. Survey. W. R. Stafford's No. 1 N. Brooks, 750 feet north and 150 feet east of the southwest corner of the west half of Section 299, T.E. &L. Survey. E. D. Willis and others' No. 1 B. H. Larimore, 150 feet south and east of the northwest corner of the east 40 acres of the B. H. Larimore 160-acre tract out of Section 2,244, T.E..L& Survey.

Corrections

Carson County—Skelly Oil Co.'s No. 21 H. Schafer, 990 feet north and 330 feet west of the southeast corner of the northeast of Section 68, Block 4, I.&G.N. Survey.

Coleman County — Texas American Syndicate's No. 1 N. D. Newton, 918 feet north and 1,900 feet east of the northeast corner of Lot 5, San Augustine University Survey No. 519, and located on N. D. Newton 1,039-acre tract. Same company's No. 2 N. D. Newton, 150 feet north and 1,958 feet west of the northeast corner of Lot 4, and located on the Mrs. N. D. Newton 1,039-acre tract out of the San Augustine University Survey No. 519.

Gray County—Clayton-Key Oil Co.'s No. 1 E. Key, 1,475 feet north and 1,100 feet west of the most southerly southeast corner of Section 1, B.&B. Survey, being 330 feet north and east of the southwest corner of their 42-acre lease.

Wilbarger County—Lido Oil Co.'s No. 5 W. T. Waggoner-C, 150 feet north and 2,784 feet west of the southeast corner of Section 50, Block 2, H.&T.C. Survey.

FRENCH OIL CONCESSION REPORTED IN COLOMBIA

A cable to the New York Times from Bogota, Colombia, says: The Minister of Industries, Dr. Jose A. Montalvo, has signed a contract, subject to Congressional approval, granting a concession of 50,000 hectares of public lands for petroleum exploration and exploitation to a group of French capitalists, according to the press here.

The concessionaires include Pierre Dupuy, director of the Petit Parisien; Alphonse Gerard, manager of the Companie St. Gobain, and Count Robert Vogue, manager of the Berre refinery in France.

The area conceded is in the Carare region, a strip parallel to and south of the grant to the Colombian Petroleum Union, with the national public reserve zone between.

It is understood this concession is similar to that granted to the Colombian Petroleum Union, with a special provision obligating the concessionaries to form a company subject to Colombian jurisdiction and to subrogate the concession rights and obligations to the new company within six months. The concessionaires are required to post immediately a bond of 100,000 pesos.

It is reported that Senor Montalvo is negotiating a similar concession with an unnamed American company in the same area.

UNION OIL OFFICIALS UNITED IN OPTIMISM

LOS ANGELES, Calif., Mar. 22.—Predictions of a more profitable condition in the oil industry in the near future, due to success accorded statewide efforts to curtail production, were made by officers of Union Oil Co. of California at the annual meeting.

L. P. St. Clair, executive vice president, asserted that producers of the state believed production must be held to requirements of the industry. He pointed out that during 1929 inventories increased out of proportion to desirable figure. He said that while refineries of the state produced 38 per cent more gasoline than during the previous year, sales of gasoline had increased only 15 per cent.

Curtailment of California production to 611,000 bls. daily, Mr. St. Clair said, would make possible reduction of the actual amount of crude run through refineries and would result in stabilization of conditions generally. He declared a return to prosperous conditions should not necessarily mean an increase in the price of petroleum products.

"We have a responsibility to the consumer as well as to the industry," said Mr. St. Clair. "I believe we should get a fair price for our products but it should be within reason."

It is to the interest of all California, particularly southern California, to have the oil industry in a prosperous condition, he said, pointing out that petroleum products marketed during 1929 had a total value, based on refinery prices, of $750,000,000. Two-thirds of these products were marketed outside the state, receipts being returned to California.

P. N. Boggs, vice president in charge of production and chairman of the general curtailment committee of 15, paid tribute to independent operators whose co-operation had made possible carrying out the curtailment program. He said the outlook for the industry was better than it had been in years.

R. D. Mathews, vice president in charge of distribution, declared the company was enjoying substantial diversification in the marketing of its products. He said 40 per cent of the 37,000,000 bbls. of petroleum products marketed during 1929 had been sold abroad, 5 per cent on the Atlantic seaboard, and 55 per cent on the Pacific Coast. Mr. Mathews said he looked for an increase in sales of the company's products in 1930.

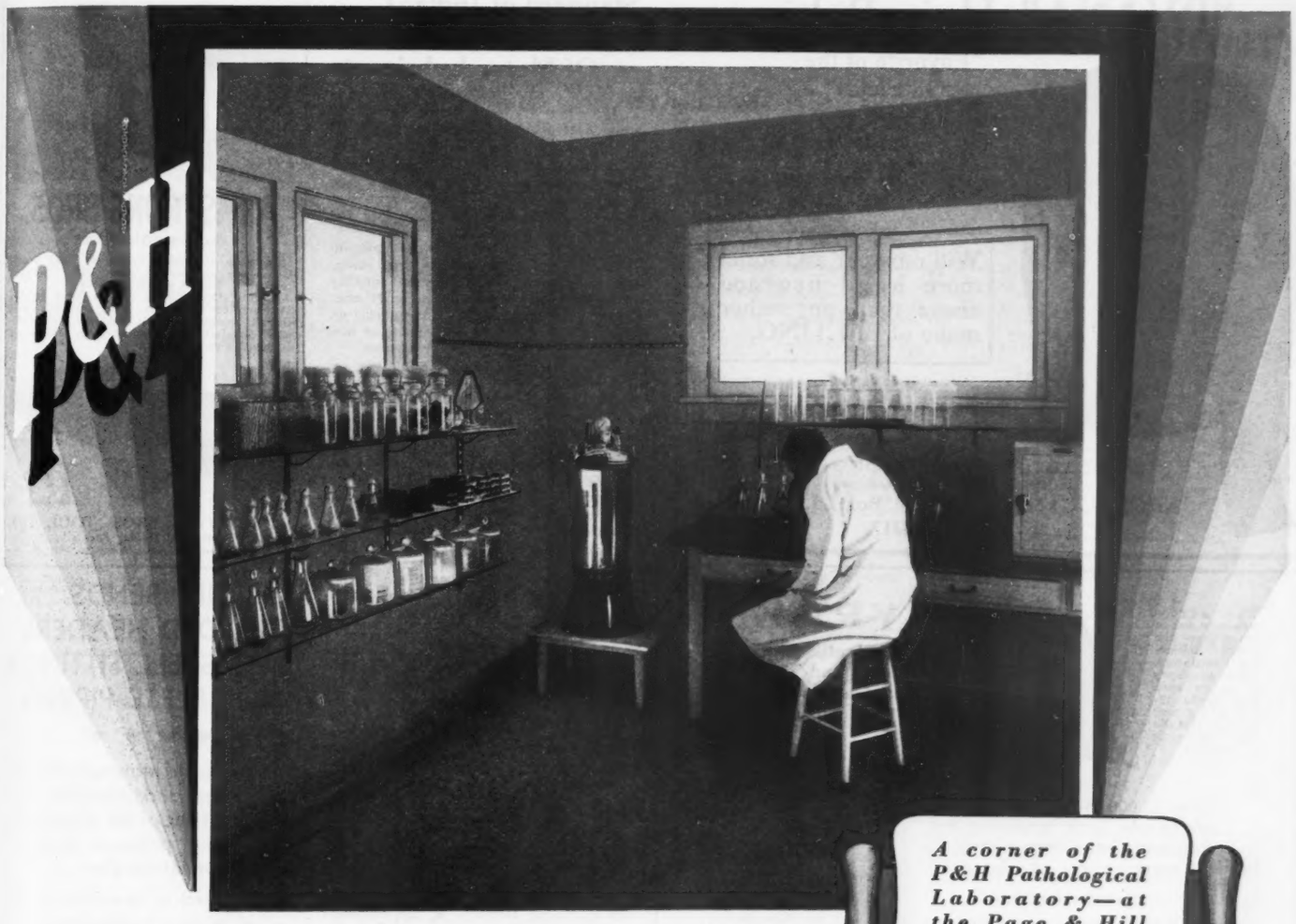
SHREVEPORT GEOLOGISTS

SHREVEPORT, La., Mar. 22.—Discussion of the annual field trip of the Shreveport Geological Society at the March meeting resulted in plans for touring the outcrops of the Lower Cretaceous in southwestern Arkansas. The trip will be made early in June and arrangements are in charge of S. E. Mix, Gulf Refining Co.; C. L. Moody, Ohio Oil Co., and M. L. Israelsky of the Louisiana Gas & Fuel Co.

Progress in the investigations of the committee appointed to consider standardizing geological names of formations in North Louisiana and South Arkansas was reported by H. K. Shearer, chairman. A discussion of South Louisiana salt domes by G. W. Schneider followed.

KENTUCKY SURVEY

Dr. Willard Rouse Jillson, state geologist of Kentucky, announces an appropriation by the general assembly of Kentucky of $100,000 annually during the next bienium beginning Apirl 1, 1930, for co-operative topographic mapping in Kentucky. The State appropriation has been matched by the topographic branch of the United States Geological Survey insuring an expenditure for the surveying of standard topographical sheets in Kentucky during the next two years of $400,000. About 70 per cent of the 40,598 square miles in Kentucky is now topographically surveyed, and it is hoped to complete the State within about three years.



A corner of the P&H Pathological Laboratory—at the Page & Hill Saint Paul Plant.

Enlisting Science to Improve "P&H Process" Poles

IN addition to a well equipped Testing Laboratory, we maintain at our Saint Paul Plant a modern Pathological Laboratory for the study of Fungi, wood structure and the effect of the different elements in creosote. Here, under scientifically correct conditions, the organisms that cause wood to decay are isolated and studied and the toxicity of creosote tested and its effect observed.

This and other Page & Hill research is for but one purpose—the production of poles which are of greater utility and longer life.

"P & H" also leads in rapid shipping service. Whatever your Cedar pole needs..Northern White Cedar or Western Red Cedar..we're always ready to meet them..promptly.

"Still in the Lead"

PAGE AND HILL CO.

MINNEAPOLIS. MINN.

Kansas City, Mo., 201 Mainstreet Bank Bldg. Chicago, Ill., 19 So. La Salle St. New York, N. Y., 50 Church St.
Omaha, Neb., 711 Electric Bldg. Dayton, Ohio, 854 Reibold Bldg. Boston, Mass., 733 Public Service Bldg.

"IWANA" Hair Belting

"Favorite of the Oil Fields" and UNRIVALLED for SERVICE

Will outwear and stand more hard use and abuse than any other make of BELTING.

Manufactured by
Fenwick-Reddaway Mfg. Co.
Newark, N. J.

CAMEL'S HAIR, COTTON and LINEN PRODUCTS
Mid-Continent Representative
ARCH F. CAMPBELL, P. O. Box 171, Tulsa, Okla.
Phone 2-1117

BYRNE

Revolving Ventilator built light, strong and compact as an airplane

The arrow points to one of the gills of the Byrne Revolving Ventilators. These slits keep it on an even keel while revolving and provide just the right amount of suction.

Over 15,000 Byrne Ventilators are in use, both revolving and stationary—the reason they do the work better.

Manufactured by
TULSA SHEET METAL CO.
13-15 South Lansing
TULSA, OKLAHOMA

The Byrne Stationary Ventilator. Note the size of the weather guard and its sturdy construction.

AMERICAN
AURORA, ILL.

The American Well Works manufactures a complete line of oil well pumping units. They are made in a wide variety of sizes permitting a length of stroke of from twelve to fifty inches. All gears are enclosed and run in a bath of oil. Used throughout the oil fields of the world. Catalogs and engineering data upon request.

C. S. CARTER, *Sales Representative*
711 Mid-Continent Bldg., Tulsa, Oklahoma
WM. PIERCE, *Sales Representative*
701 Elm St., Dallas, Texas

THE AMERICAN WELL WORKS
General Offices AURORA, ILLINOIS and Dallas

Athey
TRUSS WHEEL
OIL FIELD WAGONS

ATHEYS are all steel general utility wagons for use behind tractors, either singly or in train. Carry maximum 10-ton loads under all operating conditions. They are the modern, economical means for hauling heavy loads. Made in 10, 15 and 20-ton capacities. Write for full information.

ATHEY TRUSS WHEEL CO.
130 North Wells Street .. Chicago, U. S. A.
Cable Address: "Trusswheel," Chicago
The Baldwin Locomotive Works,
Foreign Representatives, Philadelphia, Pa.

See Classified Wants on Pages 132-133

Standard of Indiana Announces New Line Of Motor Lubricants

The Standard Oil Co. of Indiana has announced a complete new line of Iso-Vis and Polarine motor oils.

Although to be marketed under the same trade names the company has used before, these new oils are represented to be very different both in appearance and in characteristics.

The results of research work have indicated to the company that the essential properties which represent quality and determine motor oil efficiency are: Viscosity temperature characteristics, pour test, tendency to deposit engine carbon, and stability in the crankcase.

The work also showed that the oil should excel in all the above properties rather than have unusual qualities in one at the expense of the others.

Having determined the desirable properties, the company changed many of the existing refining processes to get the desired results.

The new oils are light in color and 100 per cent overhead stocks, leaving a minimum of engine carbon, and secure satisfactory resistance to oxidation in the crankcase. The new oils range in color from 2½ to 4 N.P.A. for all grades and represent in this respect a marked change from the old Iso-Vis and Polarine motor oils.

Winter Grades

Dewaxing of the new oils has been carried out to the extent that all grades have a low cold test. The winter grade will pour below zero temperature and the heavier grades for summer have been dewaxed to give an exceedingly low pour test for oils of such high viscosity.

The new Iso-Vis oils will be marketed in five grades and Polarine in six grades. The company is attempting to eliminate the confusion as to meaning of grade designation by prominently using the S.A.E. viscosity numbers of the oil as part of the name.

The new oils are now available through the marketing territory of the Standard of Indiana. They are also being distributed in Nebraska by the Standard Oil Co. of Nebraska and in the Rocky Mountain states by the Midwest Refining Co. from April 15. They will be sold at the same prices as the old oils.

FIRST-AID CONTEST LOUISVILLE, SEPTEMBER

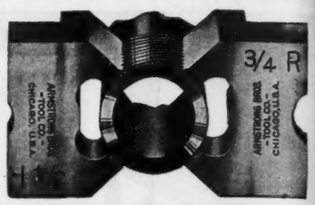
The ninth international first-aid and mine-rescue contest, sponsored by the Joseph A. Holmes Safety Association and the United States Bureau of Mines, Department of Commerce, will be held at Louisville, Ky., September 16, 17 and 18, 1930, it has been announced by Scott Turner, director of the Bureau of Mines, and president of the Joseph A. Holmes Safety Association.

Employes of coal and metal mines, quarries and metallurgical plants, and workers in the oil and gas industries are eligible to participate in the contest. More than 400,000 workers in the different mineral industries have been trained in first-aid or mine-rescue methods by the Bureau of Mines, over 82,000 having been so trained in the past fiscal year.

An unusual feature connected with the meet will be an extensive manufacturers' exhibit of "permissible" mining equipment and mine-safety devices illustrating the various types of gas masks, gas detectors, mine lamps, breathing apparatus, etc., tested and approved by the Bureau of Mines.

ANGLO-PERSIAN OIL OUTPUT

Crude oil production of Anglo-Persian Oil Co. in Persia amounted to 857,143 bbls. in 1929, increase of 71,428 bbls. over 1928 and 142,857 bbls. over 1927, company's resident director estimated, report of Vice Consul Villard, Teheran, to Department of Commerce states.



ARMSTRONG BROS.
Adjustable Dies

Dies made of special Vanadium Tool Steel. Cut faster and outlast other dies. Correct in design. Fit all standard stocks. ARMSTRONG BROS. Stocks have bodies of Certified Malleable Iron, carefully machined, enamelled black. Handles dull nickeled. Carefully machined thruout. Takes all standard dies.

Write for Catalog P-10

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
330 N. Francisco Ave., Chicago, U. S. A.

PIPE BENDS
WELDED HEADERS
CAST STEEL FITTINGS
COMPLETE PIPING

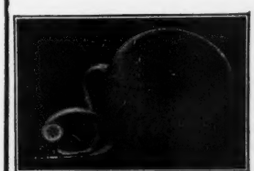
We build standard or design and manufacture special for every refinery pressure and temperature service.

A third of a century of piping leadership.

Gea B LIMBERT PIPING & Co

560 FULTON STREET
CHICAGO, ILL.

OGJ 3-27 Gra



FOR USE IN OIL LINES WHILE WELDING

Safety Gas Main Stopper Co.
523 Atlantic Ave., Brooklyn, N. Y.

A. F. MELCHER
Petroleum Engineering Laboratories
Analysis of cores, saturation, porosity, feet of pay, Valuations, Repressuring. Know your Oil Sands.
Main Laboratory, 1137 N. Cheyenne Ave., Tulsa, Okla. Tel. 4-5460. Branch Laboratory, Holley Hotel, Bradford, Pa.

Always Renew Your Subscription Promptly

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

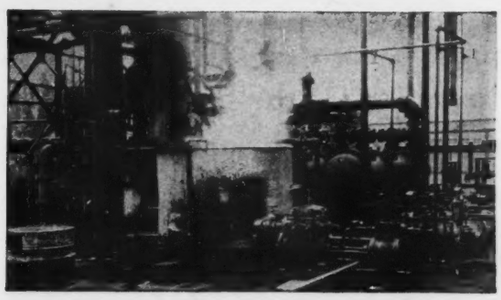
PIPE fitters find that Kennedy Malleable-iron Pipe Fittings save time and labor. They go on the pipe easily, screw up easily, are easy to make tight, and they stay tight because of the care and accuracy with which they are threaded.

And there are many additional advantages in standardizing on Kennedy Fittings. You will find them of truly malleable iron, free from defects of any nature, and amply strong without being unnecessarily heavy. They are easy to get in any quantity from your supply house, and the big Kennedy line includes a type for every purpose.

Try Kennedy Fittings and Valves on your next job. The Kennedy catalog describes and lists them fully and we will mail you copy for reference if you will send us your name and address and mention your dealer.

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

New York Chicago San Francisco Philadelphia Cleveland
Atlanta El Paso Salt Lake City Los Angeles Seattle



Cleans cooler tubes to the metal

GASOLINE absorption plants can increase cooling efficiency and obtain a better yield by keeping oil coolers clean the Oakite way.

Circulating a solution of an Oakite material through the tubes is all that is necessary. Sludge and deposits are quickly loosened and flushed out, cleaning the tubes right down to the metal. Heat transfer is increased — circulation resistance removed.

The Oakite Service Man near you will be glad to give you all details for this and many other refinery cleaning jobs—without obligating you in any way. Write us to have him call.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the U. S. and Canada.

Manufactured only by
OAKITE PRODUCTS, INC., 44C Thames Street. NEW YORK, N. Y.

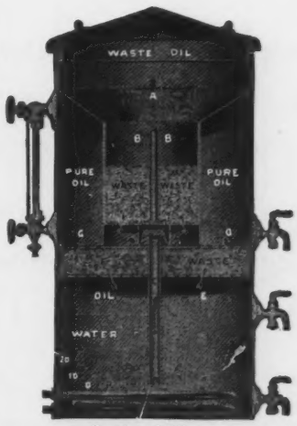
OAKITE

TRADE MARK REG. U.S. PAT. OFF.

Industrial Cleaning Materials and Methods

OIL

At Half Price!



Sectional View
Cross Oil Filter

WHEN we say that a Cross Oil Filter will save from 50 to 75 per cent of the oil used for lubricating purposes, we aren't guessing at the results — we know from 35 years' experience—but to convince you we will send one on a 30-day trial and let you prove it to your own satisfaction.

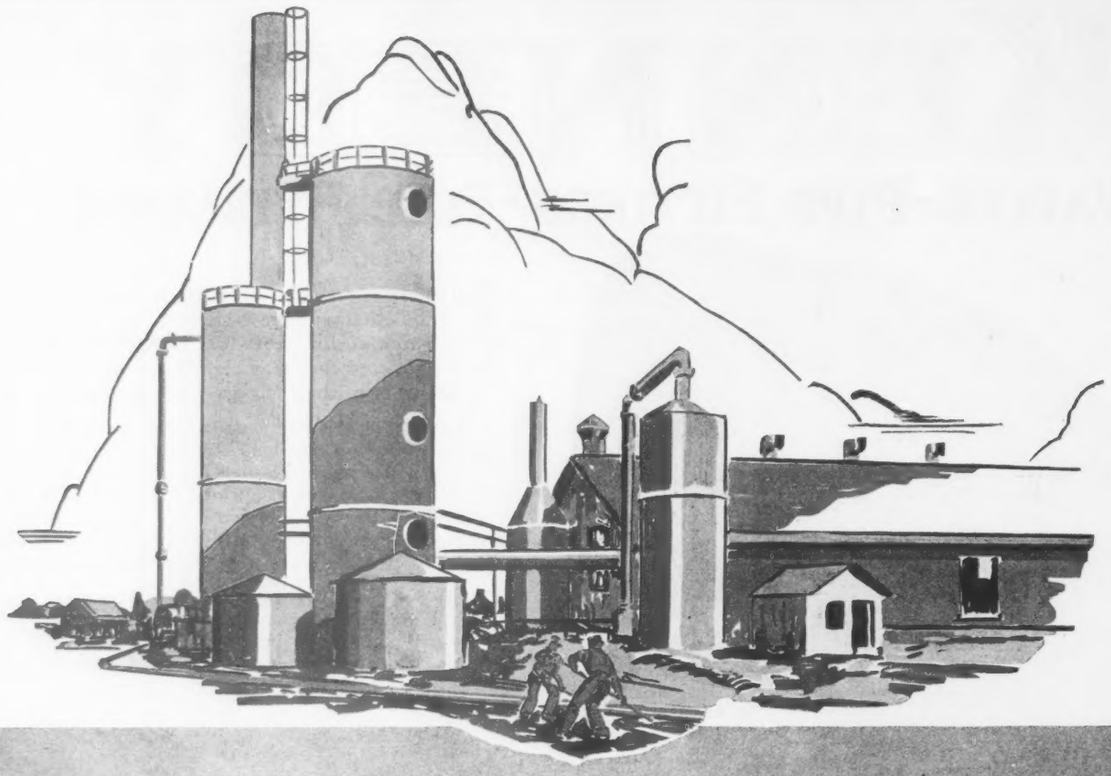
Capacities from ½-gallon an hour upwards.

Write today and ask about our 30-day trial.

The BURT MFG. Co.

Ventilators-Oil Filters-Exhaust Heads

929 S. High St. Akron, Ohio



"THE *Importance of* HYDROGEN-SULPHIDE *Removal*"

Corrosion in pipe lines—costly damage to equipment—a very serious health menace—are but a few of the basic facts that demand Hydrogen Sulphide removal—facts that are based on proven operating costs and experience.

The Koppers Liquid Purification Process is successfully purifying gas and saving many times its costs under widely varying conditions.

We will welcome the opportunity to cooperate with you in solving your problems.

THE WESTERN GAS CONSTRUCTION COMPANY
FORT WAYNE IND.
SUBSIDIARY OF THE KOPPERS COMPANY

sday,

Detailed Operations in All Fields for Month of February

SUMMARY OF WELLS COMPLETED

Field—	Comp.	Prod.	Dry	Gas
Eastern	507	2,999	32	55
Central Ohio	82	1,488	26	32
Lima	13	196	3	3
Indiana	11	257	7	2
Michigan	28	2,543	10	3
Illinois	9	220	4	0
Kentucky-Tennessee	66	784	30	9
Oklahoma	163	242,983	39	20
Kansas	59	8,774	27	8
Texas Panhandle	35	13,110	7	8
Field—	Comp.	Prod.	Dry	Gas
N. Central Texas	200	6,742	106	6
E. Central Texas	4	5,230	0	0
West Texas	72	37,119	20	2
Southwest Texas	76	56,325	27	2
East Texas	3	....	1	2
Gulf Coast	82	32,385	27	3
North Louisiana	40	8,994	14	11
Arkansas	5	181	4	0
Wyoming	7	2,795	2	2
Montana	4	126	2	0
Colorado	2	....	2	0
New Mexico	11	13,980	3	2
Total February	1,479	437,231	393	170
Total January	1,698	760,158	492	223
Difference	219	322,927	99	53

RIGS AND WELLS DRILLING

Field—	Rigs	Dig.	Ttl.
Eastern	105	353	458
Central Ohio	74	177	251
Lima	4	29	33
Indiana	6	41	47
Michigan	56	117	173
Illinois	2	42	44
Kentucky	13	98	111
Alabama	2	3	5
Mississippi	2	16	18
Oklahoma	146	876	1,022
Kansas	63	259	322
Texas Panhandle	31	118	149
North Central Texas	70	420	490
East Central Texas	8	29	37
West Texas	68	225	293
Southwest Texas	39	119	158
East Texas	2	12	14
Gulf Coast	41	204	245
North Louisiana	88	125	213
Arkansas	11	48	59
Wyoming	21	123	144
Montana	18	80	98
Colorado	18	78	96
New Mexico	28	69	97
Utah	3	32	35
Total February	919	3,693	4,612
Total January	969	3,644	4,613
Difference	50	49	1

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Creek	5	120	2	1
Caddo	3	1,200	1	0
Marshall	5	93	2	0
Muskogee	15	10	8	6
Okfuskee	3	345	0	0
Okmulgee	5	...	3	2
Oklahoma	27	195,143	0	3
Osage	3	10	2	0
Pawnee	5	50	1	0
Pontotoc	8	573	2	0
Pottawatomie	6	3,345	2	0
Seminole	51	39,814	6	7
Stephens	7	605	3	1
Miscellaneous	20	1,675	7	4
Total February	163	242,983	39	20
Total January	381	580,301	100	43
Difference	218	337,318	61	23

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Caddo	2	9	11
Carter	1	15	16
Cotton	4	7	11
Creek	12	41	53
Grady	2	4	6
Grant	0	12	12
Hughes	2	10	12
Lincoln	1	8	9
Marshall	2	8	10
Muskogee	5	16	21
Oklahoma	16	205	221
Okfuskee	6	31	37
Okmulgee	2	15	17
Osage	10	21	31
Pawnee	7	10	17
Payne	1	15	16
Pontotoc	6	20	26
Pottawatomie	20	163	183
Seminole	21	152	173
Stephens	10	22	32
Tulsa	2	11	13
Wagoner	4	8	12
Miscellaneous	10	73	83
Total February	146	876	1,022
Total January	171	795	966
Difference	25	81	56

CREEK COUNTY
WELLS COMPLETED

27-17-7 B. Lewis, Magnolia Pet. Co.... 10
18-19-9 Bartlett, H. U. Bartlett 5-B.... gas
17-17-7 Tiger, Magnolia Pet. Co. 4.... dry
26-16-9 Carr, Mid-Continent Pet. Corp. & Franchott 12.... dry
30-15-9 Foster, Skelly Oil Co. 1.... 110

Wells completed 5
Production 120
Dry 2
Gas 1
Gas production 1,250,000

CADDO COUNTY

36-6-10w Rowe, Louisiana O. R. Co. 1.. 600
Rowe, Magnolia Pet. Co. 3.... dry
36-6-10w Caddo Rowe, Magnolia Pet. Co. 7 600

Wells completed 3
Production 1,200
Dry 1

MARSHALL COUNTY

13-5s-5 McComas, C. B. Goddard Oil Co. 4 25
14-5s-5 Taliaferro, Bilbo Trust Co. 4.. 38
13-5s-5 McComas, Burrough & Dennis 1 dry
26-5s-5 Watts, Max Westheimer 1.... dry
30-5s-6 Sullivan, Bilbo Oil Trust Co. 3.. 30

Wells completed 5
Production 93
Dry 2

MUSKOGEE COUNTY

28-16-15 Hawkins, John Aggas 4.... dry
34-15-18 Spaulding, Arthur Oil Co. 10.. gas
15-13-18 Fee, L. R. Kershaw 1 .... gas
18-13-19 Smith, Muskogee Natl. Gas Co. 3 .... dry
12-15-15 Grayson, Denton & Marshall 1 dry
29-15-16 Howard, E. Price et al 3.... dry
9-15-18 Carlina, H. L. Jolly 3.... 10
34-15-18 Townsite, Robert Bebb 1.... gas
31-14-19 Mundis, O. E. Stoner 1.... dry
15-13-16 Davis, Bement Oil Co. 1.... dry
1-13-18 Welch, Hale & Reynolds 1.... dry
15-13-18 Fee, L. R. Kershaw 2.... gas
Montgomery, C. F. Ray et al 1 gas
4-13-19 Brook, M. S. Mussellem 6.... dry
31-12-19 Parker, Midwestern O. & G. Co. 2 .... gas

Wells completed 15
Production 10
Dry 8
Gas 6
Gas production 4,583,000

OKFUSKEE COUNTY

30-12-12 Randall, Mitchell Oil Co. 5.... 70
8-13-10 Beidleman, The Prairie O. & G. Co. 1 75
22-12-11 Wilson, Sunray Oil Co. et al 2 200

Wells completed 3
Production 345

OKMULGEE COUNTY

7-13-15 Blake, Lambert O. & G. Co. 2 gas
28-15-12 Fee, Dodge, Chaney & Jenkins 1 .... dry
26-14-14 Flint, J. L. Selby 18.... dry
18-14-11 Freeman, W. T. Campbell et al 1 .... dry
24-14-12 Warner, I. M. Levine et al 2 gas

Wells completed 5
Dry 3
Gas 2
Gas production 1,750,000

PAWNEE COUNTY

18-21-8 Helmick, G. W. Lillie et al 12.. 10
19-21-8 Kelso, P. Adamson Jr. 1.... dry
30-21-9 Edmiston, Geraldine Oil Co. 3.. 15
15-20-9 Fleming, H. & Bartlett 2.... 15
25-20-9 Smith, Jenal & Lee 1.... 10

Wells completed 5
Production 50
Dry 1

OSAGE COUNTY

12-26-11 Sam Goodman 3.... dry
27-25-9 Peters Petroleum Corp. 1.... dry
12-21-11 Sterling O. & G. Co. 17-A.... 10

Wells completed 3
Production 10
Dry 2

OKLAHOMA COUNTY

13-11-3w Verne, I. T. I. Oil Co. et al 1.2,905
Wheeler, I. T. I. Oil Co. et al 2 2,246
14-11-3w Drake, I. T. I. Oil Co. et al 2 8,780
24-11-3w Fortson Farley, I. T. I. Oil Co. et al 1.... 8,995
25-11-3w Clauer, Coline Oil Co. 3.... 4,609
25-11-3w E. Joyce, I. T. I. Oil Co. et al 1 675
26-11-3w Mackey, I. T. I. Oil Co. et al 1 199
18-11-2w Warren, Coline Oil Co. 1.... 27,167
19-11-2w Canfield Button, I. T. I. Oil Co. et al 1.... 15,675
Farley, I. T. I. Oil Co. et al 1 30,438
30-11-2w Petty, Shell Pet. Corp. 5.... 35
Petty, Shell Pet. Corp. 6.... 3,876
Petty, Shell Pet. Corp. 7.... 1,197
19-12-2w Button, I. T. I. Oil Co. 3.. 11,118
13-11-3w Trosper Park, Cromwell and Franklin et al 3.... 10,123
12-11-3w Lowery, Wirt Franklin Pet. Corp. 2 16,421
13-11-3w Trosper, I. T. I. Oil Co. et al 6 1,973
Trosper, I .T. I. Oil Co. et al 8 .... gas
Trosper, I. T. I. Oil Co. et al 9 4,293
Trosper, I. T. I. Oil Co. et al 10 14,136
14-11-3w Drake, I. T. I. Oil Co. et al 1 4,631
24-11-3w A. Bodine, I. T. I. Oil Co. et al 3 .... gas
25-11-3w W. Anderson, I. T. I. O. Oil Co. et al 1.... gas
W. Anderson, I. T. I. Oil Co. et al 2.... 8,390
36-11-3w School land No. 54, Sinclair O. & G. Co. 1.... 4,940
18-11-2w Warren, Coline Oil Co. 5.... 5,325
19-11-2w Button, I. T. I. Oil Co. et al 4 6,996

Wells completed 27
Production 195,143
Gas 3
Gas production 137,000,000

PONTOTOC COUNTY

8-5-5 Jones, Independent O. & G. Co. 1 dry
17-5-8 Reed, Magnolia Pet. Co. 8.... 125
30-5-5 Hatcher, The Texas Pacific Coal & Oil Co. 3.... 60
32-5-5 Adams, Delaney & King 1.... dry
19-5-5 Davis, Independent O. & G. Co. 2 110
31-5-5 Browell, Benedum & Trees Oil Co. 1 140
20-5-8 Warfle, Louisiana O. R. Corp. 9 12
6-4-8 Herman, Dixie Oil Co. 3.... 126

Wells completed 8
Production 573
Dry 2

POTTAWATOMIE COUNTY

21-7-4 Lynn, Magnolia Pet. Co. 2.... 170
5-9-5 Rogers, Mid-Continent Pet. Corp. 6 165
30-9-5 Billington, Magnolia Pet. Co. 1 dry
8-8-5 Smith, Amerada Pet. Corp. 3.... dry
35-8-4 Brandenburg, I. T. I. Oil Co. 2..2,400
4-7-4 McGee, The Prairie O. & G. Co. 1 610

Wells completed 6
Production 3,345
Dry 2

SEMINOLE COUNTY

24-9-5 Moore, Magnolia Pet. Co. 3....1,270
7-9-6 Harber, Carter Oil Co. 3.... 125
19-9-6 Nichols, Sinclair O. & G. Co. 7..1,110
Lasley, Tidal Oil Co. & Inter-ocean Oil 1 3,665
Fullerton, Amerada Pet. Corp. & Dixie Oil 2 3,275
20-9-6 Harjo, Tidal Oil Co. et al 1.... 424
Jones, McMan Oil Co. 1.... 1,270
2-8-5 Coker, Carter Oil Co. 3.... 1,265
26-8-5 Harjo, Continental Oil Co. et al 1 .... dry
24-7-6 Walker, Carter Oil Co. 550
31-7-6 Harjo, W. B. Pine 1.... dry
8-7-7 Yarhola, Mid-Continent Pet. Corp. 2 1,930
8-6-6 Simedlhake, Independent O. & G. Co. 1 643
18-6-8 Brannon, Carter Oil Co. 1.... gas
26-8-4 Bodkin, The Prairie O. & G. Co. 1 55
24-9-5 Maguire, Continental Oil Co. 1..2,140
11-9-6 Mayhue, Carter Oil Co. 2.... 895
17-9-6 Powell, Burke-Greis Oil Co. et al 2 .... dry
19-9-6 Hopper, Shell Pet. Corp. 8.... 4,018
Nichols, Sinclair O. & G. Co. 8.. 555
Magruder, The Texas Company 1 135
Magruder, The Texas Company 2 1,885
Magruder, The Texas Company 4 690
20-9-6 Maley, Gypsy Oil Co. 4.... 655
Fixico, Independent O. & G. and Atlantic 2 1,533
Fixico, Independent O. & G. and Atlantic 3 2,917
23-8-5 Bruner, Gypsy Oil Co. et al 1... dry
9-7-7 Reed, Superior Oil Corp. and Magnolia Pet. 2 .... dry
19-7-7 Factor, Gypsy Oil Co. 1.... gas
13-5-7 Culley, Sinclair O. & G. Co. 1... 65
Culley, Sinclair O. & G. Co. 2... 65
6-9-6 Campbell, The Prairie O. & G. Co. 4 400
7-5-8 Harjo, Producers & Refiners Corp. 1 .... gas
8-7-7 Tiger, The Prairie O. & G. Co. and T. B. Slick 2 1,244
23-9-5 Grounds, Magnolia Pet. Co. 1...1,000
11-9-6 Mayhue, Carter Oil Co. et al 3.. 390
17-9-6 Powell, Carter Oil Co. 1.... dry
18-9-6 Noble, Barnsdall Oil Co. 6.... 31
Noble, Barnsdall Oil Co. 7.... 42
19-9-6 Hopper, Shell Pet. Corp. 2.... 1,364
Magruder, The Texas Company 5 55
20-9-6 Maley, Gypsy Oil Co. 3.... 42
7-6-8 Davis "B," Sinclair O. & G. Co. 2 1,405
8-6-8 Chapman, Skelly Oil Co. et al 1 50
11-7-6 Caesar, Shell Pet. Corp. 1-A.... 851
24-7-6 Willie, Gypsy Oil Co. 2.... 1,440
8-7-7 Harjo, The Prairie O. & G. Co. and T. B. Slick 2 150
Harjo, The Prairie O. & G. Co. and T. B. Slick 3 120
12-5-7 Lusty, Blackwell O. & G. Co. 1 65
14-5-7 Harjo, Mid-Continent Pet. Corp. 1-A 70
7-5-8 Fleet, Mid-Continent Pet. Corp. 17 50

Wells completed 51
Production 39,814
Dry 6
Gas 3
Gas production 23,000,000

STEPHENS COUNTY

25-1s-8w Russell, Magnolia Pet. Co. 6.. dry
34-1s-8w Nigh, Douthitt et al 2.... 5
5-2s-6w Andrea, Ven Mex Oil Co. and Mid-Continent Oil 1 .... dry
8-2s-6w Andrea, Magnolia Pet. Co. 2. gas
16-1s-8w Blake, T. B. Slick 1 .... dry
9-2s-6w Anderson, Dunmar Oil Co. 1.. 350
Spain, Wirt Franklin Pet. Corp. 2 250

Wells completed 7
Production 605
Dry 3
Gas 1
Gas production 14,000,000

MISSCELLANEOUS COUNTIES

Lincoln County—
8-14-4 Freeman, Magnolia Pet. Co. 1.. 52
18-14-4 Massie, Tom Slick Oil Co. 1.... dry
8-14-4 Staubus, Magnolia Pet. Co. 2.. 290

McClain County—
16-5-3 Newsom, Homaokla Oil Co. 1... 46

Cotton County—
35-1s-10w Humphries, Perkins & Cullum 1 .... dry

Kiowa County—
13-6-17w Greenlee, Mesa Oil Co. 1.... dry

Hughes County—
28-9-10 Canard, The Prairie O. & G. Co. 2 .... gas
28-9-10 Brooks "B," Inglehart et al 1 dry
12-7-8 Coker, The Prairie O. & G. Co. 1 gas

Wagoner County—
34-17-18 Grayson, H. H. Orr 3.... gas

Noble County—
3-30-1w Albers, I. T. I. Oil Co. 1.... dry
22-22-1 Wentz, The Prairie O. & G. Co. et al 1 150

Kay County—
29-25-1w Liegrote, Blackwell O. & G. Co. 2 30

Logan County—
30-19-4w Storey, Shell Pet. Corp. 4.... 787
31-19-4w Gardner, J. S. Cosden, Inc. 2.. 402

Carter County—
30-1s-3w Hightower, Magnolia Pet. Co. 3 dry
28-1s-3w Hale, Carter Oil Co. 4.... dry

Payne County—
33-19-5 Curley Chief, Glen Smith et al 2 12
4-18-5 Searcy, Shaffer O. & R. Co. 1.. gas

Tulsa County—
13-19-10 Anthis, Union Drlg. Co. 2.... 6

Wells completed 20
Production 1,675
Dry 7
Gas 4
Gas production 21,400,000

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	3	135	1	0
Cowley	8	215	3	2
Greenwood	8	1,590	1	0
McPherson	8	4,807	4	1
Sedgwick	3	777	2	0
Miscellaneous	29	1,250	16	5
Total February	59	8,774	27	8
Total January	64	8,610	42	4
Difference	5	164	15	4

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	9	21	30
Cowley	3	17	20
Elk	0	7	7
Ellis	5	6	11
Green	5	25	30
Harvey	2	5	7
McPherson	16	50	66
Marion	0	8	8
Reno	2	5	7
Rice	3	4	7
Russell	1	6	7
Sedgwick	4	14	18
Sumner	0	10	10
Woodson	2	14	16
Miscellaneous	11	67	78
Total February	63	259	322
Total January	67	258	325
Difference	4	1	3

WELLS COMPLETED
BUTLER COUNTY

25-24-3 Joseph Southbrook Oil Co. 1 .. 85
6-27-6 Sluss "B", Garden et al 5 50
10-28-5 Covert, Sanford et al 1 .... dry

Wells completed 3
Production 135
Dry 1

COWLEY COUNTY

20-31-6 Fitzgerald, Lewis Prod. and Gypsy Oil Co. 1 70
Harris, Mid-Kansas O. & G. Co. 2 .... gas
34-32-4 Stone, Roth & Faurot 1 .... dry
21-31-6 Martin, Mission Oil Co. 1 .... gas
31-31-8 Reidy, Roth & Faurot 1 85
36-32-4 Peacock, Wilson et al 1 .... dry
19-32-5 Bartlow, Hull et al 7 .... dry
30-31-6 Pierce "A", Lewis and Empire O. & R. Co. 3 60

Wells completed 8
Production 215
Dry 3
Gas 2
Gas production 26,000,000

GREENWOOD COUNTY

22-23-11 Ellis, Dixie Oil Co. and Amerada Pet. Corp. 4 75
36-23-11 Patterson "C", Empire O. & R. Co. 5 395
1-24-11 Newhouse, The Prairie O. & G. Co. 2 640
5-24-13 Dalton, Walton Oil Co. 2 .... dry
7-24-13 Bowman, Young et al 1 15
27-23-11 Ellis "B", Simmons and Amerada Pet. Corp. 2 125
36-23-11 Patterson "C", Empire O. & R. Co. 6 265
16-24-12 Parrish, The Prairie O. & G. Co. 1 75

Wells completed 8
Production 1590
Dry 1

McPHERSON COUNTY

12-19-2w Wallace, McPherson O. & G. Dev. Co. 1 .... gas
15-20-2w Koehn, Reynolds et al 1 .... dry

10-21-3w Stuckey, The Prairie O. & G. Co. and Stuckey 1 2040
31-18-2w Larson, Mid-Kansas O. & G. Co. 2 ..... dry
24-20-2w Krehbiel, Derby Oil Co. 1 .... dry
10-21-3w Voshell, Sinclair O. & G. Co. 2 945
1-19-5w Algers, Transcontinental Oil Co. 1 ..... dry
9-21-3w Voshell, Empire O. & G. Co. 2 1822

Wells completed 8
Production 4807
Dry 4
Gas 1
Gas production 8,600,000

SEDGWICK COUNTY

1-26-1w Corr, Bu-Vi-Bar Pet. 9 777
Dewees, J. S. Cosden 1 ..... dry
25-28-4w Semsroth, Continental Oil Co. 1 ..... dry

Wells completed 3
Production 777
Dry 2

MISCELLANEOUS COUNTIES

Barber County—
2-33-13w Carter, Barbara Oil Co. 2 .. dry

Barton County—
23-17-11w Disque, Tom Slick Oil Co. et al 1 ..... dry

Clay County—
19-10-2 Niemiller, Derby Oil Co. 1 .... dry

Coffey County—
21-19- 6 Miller, Chase County Pipe Line Co. 1 ..... gas
27-22-14 Sheldon, Ellis et al 1 ..... dry
18-23-15 Tebbens, Ritchey & Moore 1 .. 45
12-23-14 Scott, Selby O. & G. Co. 2 50

Ellis County—
20-12-17w Schmeidler, Phillips Pet. Co. 1 ..... dry

Chautauqua County—
1-32-10 Oliver, Griffin & Bell 7 ..... gas

Elk County—
3-31- 8 Denton, Minnehoma Oil Co. et al 5 600
12-31- 8 Hazlett, Mann et al 1 ..... gas
10-31-10 Goss, Kemper & Tory 1 ..... dry

Kingman County—
16-28-7w Ashcraft, D. P. Fleeger 1 .... dry

Lyon County—
32-21-11 McKee, Balliere et al 1 ..... dry
19-21-10 Hughes, Sheedy et al 5 15

Marion County—
24-17-2 Ucker, White Eagle O. & R. Co. et al 1 ..... dry
12-19-2 Rample, Aladdin Pet. Co. 2 .. 60

Morris County—
16-16-7 Ginter, Loomis et al 1 ..... dry

Osborne County—
18-6-13w Boyce, Mid-Kansas O. & G. Co. 1 ..... dry

Pratt County—
15-28-14w Lunt, O'Haver & Jones 1 .. dry

Rice County—
16-21-10w Boy, Boucher Oil Co. 1 .... gas
21-20-10w Thompson, Producers & Refiners Corp. 1 300

Saline County—
20-13-4w Wels, Twin Mound Oil Co. 1.. dry
20-15-5w Laubengayer, Templeman Bros. 1 ..... dry
10-15-4w Holmquist, Ira L. Keith 1 .. dry

Sumner County—
33-31-1w Peasel, T. B. Slick and Pryor & Lockhart 1 140
26-34-2 Kratz, Dickey et al 3 ..... gas
35-34-2 Norrish, Derby Oil Co. et al 1 dry

Russell County—
9-14-15w Gorham, Midwest Explin. Co. 6 40

Wells completed 29
Production 1250
Dry 16
Gas 5
Gas production 25,500,000

PANHANDLE FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	7	2,962	0	1
Gray	18	9,763	4	3
Hockley	1	0	1	0
Hutchinson	4	395	1	0
Wheeler	5	0	1	4
Total Feb.	35	13,110	7	8
Total Jan.	36	11,710	6	11
Difference	1	1,400	1	3

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Carson	3	13	4	20
Gray	19	23	22	64
Hutchinson	5	4	23	32
Moore	0	0	5	5
Wheeler	2	2	8	12
Miscellaneous	2	8	6	16
Total Feb.	31	50	68	149
Total Jan.	21	73	46	140
Difference	10	23	22	9

CARSON COUNTY

WELLS COMPLETED

L. C. McConnell, McMan Oil & Gas Co. 1 125
J. L. Noel, The Texas Company 3 267
J. K. Quinn, The Texas Company 3 176
Lee Bivins-A, Red River Gas Co. 3 36
B. F. Block, Dixon Creek Oil Co. 1 50
J. W. Fields, Empire Gas & Fuel Co. 1 2165
L. C. McConnell, Herrogan Oil Co. 1-A. 175

Completions 7
Production 2952
Gas wells 1
Gas production 1,500,000

GRAY COUNTY

E. Key, Clayton-Key Oil Co. 1 45
J. M. Shaw, Lefors Pet. Co. 4 ..... dry
Lincoln-Saunders, Shamrock O. & G. Co. 3 75
J. M. Saunders, Gulf Prod. Co. 3 390
Furneaux, Dillard et al 1 60
M. C. Vaniman, Guernsey Oil Co. 1 ... 60
J. E. Wright, Magnolia Pet. Co. 3 7000
J. B. Bowers, Operators Oil Co. 3 ..... gas
T. B. Noble, George Ray et al 1 10
M. S. Arnold, Danciger Oil & Ref. Co. 2 160
J. F. Meers, McCollum et al 1 ..... gas
H. B. Lovett, Queen Oil Co. 1 ..... dry
H. M. Barrett, Gulf Production Co. 1... gas
L. S. Stockton, St. Clair Oil Co. 1 ..... dry
J. J. Taylor, Shamrock Oil & Gas Co. 1 dry
J. M. Saunders, Derosa Oil Co. 1 1158
Combs & Worley, The Texas Company 6 475
Cook-Faulkner, The Texas Company 8 . 330

Completions 18
Production 9763
Dry holes 4
Gas wells 3
Gas production 48,000,000

HOCKLEY COUNTY

Ellwood, World Oil Co. 1 ..... dry

HUTCHINSON COUNTY

W. C. Christian, Spurlock et al 1 ..... dry
H. C. Pitcher (Hill), Smith & McDaniel 1 240
J. M. Sanford, Reliance Oil & Gas Co. 2 50
J. L. Moore, The Texas Company 4 ... 105

Completions 4
Production 395
Dry holes 1

WHEELER COUNTY

Burcham, Prince & Adams 1 ..... gas
Johnson, Wischkamper et al 2 ..... gas
A. H. Finley, Upham Gas Co. 1 ..... gas
W. L. Cooper, Murchinson & Fain 1-A (skidded 50 feet south) ..... jkd
I. Close, Martin & Debous 3 ..... gas

Completions 5
Dry holes 1
Gas wells 4
Gas production 115,000,000

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	22	474	10	0
Baylor	6	336	3	0
Brown	25	167	18	1
Callahan	9	110	7	0
Coleman	17	322	9	0
Comanche	3	20	1	1
Cooke	4	35	3	0
Eastland	5	35	4	0
Erath	2	..	1	1
Foard	1	79	0	0
Grayson	1	..	1	0
Jackson	2	772	3	0
Mills	1	..	1	0
Montague	1	..	1	0
Palo Pinto	5	15	3	1
Shackelford	13	64	10	1
Stephens	3	..	2	1
Throckmorton	2	..	2	0
Wichita	14	524	6	0
Wilbarger	13	1,851	2	0
Young	43	1,938	19	0
Total February..	200	6,742	106	6
Total January...	265	12,218	127	9
Difference	65	5,476	21	3

Summary of Rigs and Wells Drilling

County—	Rigs	Shut down	Drlg.	Ttl.
Archer	3	9	29	41
Brown	5	10	13	28
Callahan	4	2	20	26
Coleman	1	2	34	37
Cooke	3	13	11	27
Clay	0	0	3	3
Eastland	6	8	24	38
Erath	1	5	2	8
Jack	3	4	13	20
Montague	1	0	5	6
Palo Pinto	4	3	5	12
Shackelford	3	2	13	18
Stephens	2	3	12	17
Throckmorton	1	2	3	6
Wichita	4	5	23	32
Wilbarger	12	41	18	71
Young	10	11	40	61
Miscellaneous counties	7	13	19	39
Total February..	70	133	287	490
Total January...	111	289	120	520
Difference	41	156	167	10

WELLS COMPLETED

ARCHER COUNTY

H. F. Harmel, L. T. Burns et al 1..... 33
Richardson-B, Clampitt et al 1..... 60
Young, M. Richards et al 1..... 12
Brown, J. F. Bailey et al 1..... 23
Kunkel-B, Hunter et al 1..... 83
Richardson-A, Perkins & Cullum 1.... dry
Young, Mel. Richards et al 2..... 27
Wilson, Perkins-Cullum & Navarro 1... dry
Lyles, United Prod Co. & Perkins & Cullum 2 ..... dry
Harmel, Consolidated & Grisham 1.... dry
Deitrich, N. D. Goldsmith & King Royalty Co. 5 70
Kunkel-B, T. F. Hunter et al 2..... dry
Portwood, Wayne King 2..... dry
Richardson, Lawson-Duke et al 4..... 12
Kunkel, Reeder & Kisk Oil Co. 1..... dry
Parkey, Seitz-Comegys & Seitz, Inc. 1. dry
Turbeville, Burns & Long 10 56
White, Van Alex Synd 2..... 2
Harmel, L. T. Burns et al 2..... 15
Hayter, W. D. Cline et al 2..... dry
Deitrich, N. D. Goldsmith & King Roy. Co. 4 30
Deitrich, Magnolia Pet. Co. 7..... 51
Turbeville, W. N. Alexander 1..... dry

Completions 23
Production 474
Dry holes 10

BAYLOR COUNTY

Portwood, Consolidated Oil Co. et al 8 83
Upshur Co. School Land, Hudspeth et al 1 ..... dry
Portwood, Consolidated Oil Co. et al 9 dry
Howe, Perkins & Cullum 1..... dry
Portwood-Left, Barnsdall Oil Corp. 1.. 135
Portwood, Consolidated Oil Co. et al 10 118

Completions 6
Production 336
Dry holes 3

BROWN COUNTY

Truehart-C, Arcadia Refining Co. 3.... 5
Cannon, S. B. Owens, Inc. 9..... dry
Heath, Reynolds Drilling Co. 1..... dry
Martin, Texcal Oil Co. 2..... dry
Belvin, Darby Pet. Corp. 7..... 50
Gaines, Powell et al 1..... dry
George, E. L. Smith Oil Co. 24..... dry
George, Darby Pet. Corp. 1..... dry
Pierce, Eastland Oil Co. 1..... dry
Bryson, Kessler et al 1..... dry
Whiteside, S. B. Owens, Inc. 5..... 35
George, Rowan & Tong 1 ..... dry
George, E. L. Smith Oil Co. 32..... 40
Wren, Syndicate Oil Corp. 1..... dry
Butler-D, Venmex Oil Co. of Texas, 1 (Formerly Butler-A No. 2)..... dry
Kilgore, Woodley Pet. Corp. et al 1.... dry
Richardson, Bush & Roberts 2..... dry
Barnes, Green, Inc. & Paramount Oil Royalties 1 ..... dry
Reaves, Arcadia Refg. Co. 1..... 30
Boyson, Beasley et al 1..... dry
Mullins, McGahey et al 2..... dry
Butler, Michael & Nichols 1..... 7
Newton-C, G. P. Mitcham 1..... dry
Williams-A, Phillips Pet. Co. 1..... gas
Curry, E. L. Smith Oil Co. 1..... dry

Completions 25
Production 167
Dry holes 18
Gas wells 1
Gas production 950,000

CALLAHAN COUNTY

Jackson-C, Humble Oil & Refining Co. 1 ..... dry
Windham, Kleiner et al 1..... dry
Harris, Mook-Texas Oil & Gas Co. 1... dry
Johnson, Holden & DeLange 1..... dry
Jackson, Renaud & Prettyman 1..... dry
Bowman, Transcontinental Oil Co. 1.. dry
Alexander, Union Oil Co. of Nevada 2.. 20
Cavanaugh-B, Holden et al 4..... 90
Jackson-D, Humble Oil & Refg. Co. 1.. dry

Completions 9
Production 110
Dry holes 7

COLEMAN COUNTY

Haas, Elrod, Bebout & Sullivan 6..... 6
Williams, Mattox et al 1..... dry
G M. Gray, Walter Gray 1..... gas
Morris, Magnolia Pet. Co. 11..... dry
Stewardson, Gault, Brown et al 2..... dry
Pfluger, Kidney, Kamon & Western Expl. Co. 2 35
Bartholemew, Lloyd Oil Corp. 6..... 216
Reeves, Permian Oil Co. 1..... 3
Baker, Simons & Jones 1..... dry
Keeney, S. B. Owens, Inc. 2..... dry
Morris, Levi Smith 11..... dry
Baker, Acrey Bros. 1..... dry
Shore, Stepp & Vandevetter 2..... dry
Stewardson, Taylor-Link Oil Co. 1..... 9
Pfluger, Yingling et al 1..... dry
Morris, Levi Smith 10..... 13
Bartholemew, Lloyd Oil Corp. 4..... 40

Completions 17
Production 322
Dry holes 9

COMANCHE COUNTY

Lindley, Jarvis 4 20
Frost, Lone Star Gas Co. 1..... gas
Bryson, Sun Oil Co. et al 1..... dry

Completions 3
Production 20
Dry holes 1
Gas wells 1
Gas production 1,712,000

COOKE COUNTY

Sears, Humble Oil & Refg. Co. 1..... dry
Milburn-A, Kewanee Oil & Gas Co. 1... dry
Montgomery, Kewanee Oil & Gas Co. 1 35
Shaley, Richardson Bros. 1..... dry

Completions 4
Production 35
Dry holes 3

EASTLAND COUNTY

Green, Butler, Agent 1..... dry
Holcomb et al, Stalker Oil Co. 2..... dry
Lyeria, Hoffman & Page Co 4..... 35
Harbin, Harbin & Heflin 1..... dry
Stamps, Root Drlg. Co. 1..... dry

Completions 5
Production 35
Dry holes 4

ERATH COUNTY

Meyers, Haynes et al 1..... dry
Koonsman, Southern Union Gas Co. 1. gas

Completions 2
Dry holes 1
Gas wells 1
Gas production 1,843,000

FOARD COUNTY

Tarver-B, Shell Pet. Corp. 1..... 79

JACK COUNTY

Raley, C. W. Boller et al 3..... 225
Shipley, Wylie, Bilnebry, Daniels 1.... dry
Box, L. C. Harper 6..... 247
Raley, Pet. Prod. Co. et al 1..... 120
Box, Shaw Oil Co. 5..... 100
Loving-A, Bryson Oil & Gas Co. 2..... dry
Box, Shaw Oil Corp. 6..... 30
Box, Shaw Oil Corp. 7..... dry

Completions 9
Production 772
Dry holes 3

GRAYSON COUNTY

Finke, F. H. E. Oil Co. 1..... dry

MILLS COUNTY

Martin, Martin et al 1..... dry

MONTAGUE COUNTY

Lewis, Seitz-Comegys & Seitz, Inc 1... dry

PALO PINTO COUNTY

Taylor, Gordon & Gholson 1..... dry
Costello, Bob Elmore 1..... dry
Costello, Stiff Oil Co. 1..... dry
Stuart & Sons, T. P. Coal & Oil Co. 165 15
Conklin, Brazos River Oil & Gas Co. 1 gas

Completions 5
Production 15
Dry holes 3
Gas wells 1
Gas production 2,000,000

SHACKELFORD COUNTY

J. A. Mathews, J. W. Ducker 1..... dry
Davis, Grisham Hunter Corp. 6..... 10
Dyer, Midwest Expl. Co. 6..... 14
Morris & Buie, S. B. Owens Inc. et al 3 dry
Nail, A. J. Hughes 1..... dry
Mathews-B, Merrick & Lamb 5..... dry
Greene, C. Morton 1..... dry
Nail, States Oil Corp. 1..... dry
J. B. Mathews-C, Vacuum Oil Co. 7.... 40
Davis, McClintock & Griffin 1..... dry
Lones-A, Simms Pet. Co. 2..... dry
Reynolds, Texas Cons. Oil Co. 1 (was No. 2) ..... dry

Completions 13
Production 64
Dry holes 10

STEPHENS COUNTY

Elliott Ross, Lone Star Gas Co. 5..... gas
Suddeth, Byers Oil & Gas Co. 1..... dry
Beck, Heath 1..... dry

Completions 3
Dry holes 2
Gas wells 1
Gas production 500,000

THROCKMORTON COUNTY

Leathers-A, C. & B. Oil Co. 2..... dry
Gaither, F. G. Clark 1..... dry

WICHITA COUNTY

Kemp & Kempner-B, Arkansas Fuel Oil Co. 39 117
Goetz, Mogren & Anderson 19..... dry
Waggoner, The Texas Co. 373..... 84
Hodges-A, United Producers Co. 10.... 134
McFall, Bridwell Oil Co. 1..... dry
Kemp & Kempner, Coleman & Coppock 22 40
Mitchell-B, W. H. Hammon 1..... 10
Taylor, Humble Oil & Refg. Co. 20.... dry
Waggoner Bros., Kisk Oil Co. 1..... 15
Hurst Est., C. E. Litchfield 1..... dry
Waggoner-C, Continental Oil Co. 5.... 62
Allen-Foster, G. H. Howell 1..... dry
Kemp & Kempner, McCarty Oil Co. 23. dry
Waggoner, Turman Oil Co. 17..... 62

Completions 14
Production 524
Dry holes 6

WILBARGER COUNTY

Waggoner-A, Empire G. & F Co. 20 .. 100
Waggoner-A, Empire G. & F. Co. 22 .. 75
Waggoner-C, Lido Oil Co. 2 260
Waggoner-C, Lido Oil Co. 4 300
Waggoner, Davis Oil Corp. 8 350
Waggoner-Bud, Grayback Dev. Co. 1 .. 125
Waggoner-B, Lion Oil Ref. 1 ..... dry
Waggoner, The Texas Company 372 .. 16
Waggoner, Waggoner 4 15
Waggoner-P, Waggoner Ref. Co. 5 ... 150
Waggoner-B, Empire G. & F. Co. 29 .. 60
Waggoner-F, The Texas Company 3 ... dry
George, Zenith Oil Co. 2 400

Completions 13
Production 1851
Dry holes 2

YOUNG COUNTY

Donnell, Baker & Pardee 2 140
Ribble, E. T. Clark 1 ..... dry
Hill-B, P. Fowler et al 1 30
Morrison, G. A Horal 1 60
Kunkel, Madden & Hunt 3 240
Daniels, Stump & Heydrick 2 47
Wolf, Bolin & Lindsey 1 125
Wolf, Bolin & Lindsey 5 70
Hill, Carey & Martin 1 ..... dry
Hightower, Humble O. & R. Co. 1 .... dry
Taack, Panhandle Ref. Co. 1..... dry
Jones, C. A. Fennell & Smith 1 ..... dry
Jones, E. W. Walton et al 1 ..... dry
Miller, Wise & Jackson 2 ..... dry
Hill, D. L. Wolf 3 25
S. Roach, Wo-Mac Oil Co. 1 81
Deitrich, Madden & Hunt 2 193
Deitrich, Perkins & Cullum 6 ..... dry
Deitrich, Pet. Prod. Co. & Madden 2 .. 182
Deitrich, Sun Oil Co. 14 40
Casey, Wootten & Reed 1 ..... dry
Casey, Wootten & Reed 5 ..... dry
Wolf, Bolin & Lindsey 7 91
Clark, A. A. Brashear 1 ..... dry
Hill-B, Pat Fowler et al 2 38
Stewart, W L. Hawkins et al 1 ..... dry
Johnson, T. F. Hunter 1 ..... dry
Kunkel, King R. & Mooers 1 ..... dry
Leberman, E. B. Lawson 3 40
Hausler, C. B. Long 1 21
Smith et al, John Menke 1 ..... dry
Hall, Nimrod Oil Co. 1 108
Prideaux-F, Panhandle Ref. Co. 1 2
Keeter, E. R. Riggs 5 ..... dry
Prideaux Bros., Smith & Pennell 1 ... dry
Keathley, Sorrell & Jackson 1 ..... dry
Daniel, Stump & Heydrick 3 15
Leberman, United Prod. Co. 2 60
Taack, C. C. Williams et al 1 30
Cullers, Wise & Jackson 7 20
S. Roach, Wo-Mac Oil Co. 2 145
Kisinger, Cunningham et al 2 135
Kimbrell, Panhandle Ref. Co 1 ..... dry

Completions 43
Production 1938
Dry holes 19

WEST TEXAS FIELDS

Summary of Wells Completed

	Comp.	Prod.	Dry	Gas
Crane	5	1,335	0	0
Crockett	1	164	0	0
Culberson	1	0	1	0
Ector	4	3,632	0	1
Fisher	1	0	1	0
Glasscock	3	3,865	0	0
Howard	10	3,104	0	0
Irion	1	0	1	0
Jones	2	0	2	0
Kimble	1	0	1	0
Menard	1	5	0	0
Mitchell	2	0	2	0
Pecos	30	23,861	10	1
Presidio	1	0	1	0
Reagan	1	5	0	0
Upton	3	251	0	0
Ward	2	40	1	0
Winkler	3	857	0	0
Total Feb.	72	37,119	20	2
Total Jan.	67	40,453	20	0
Difference	5	3,334	0	2

Summary of Rigs and Wells Drilling

	Rigs	S.D.	Drlg.	Ttl.
Crane	2	0	4	6
Crockett	0	2	2	4
Ector	12	1	7	20
Fisher	0	0	2	2
Glasscock	3	2	8	13
Howard	10	10	18	38
Irion	2	6	1	9
Jones	1	1	2	4
Pecos	14	4	47	65
Reagan	1	0	11	12
Runnels	0	0	2	2
Upton	2	1	3	6
Ward	4	2	15	21
Winkler	0	2	3	5
Miscellaneous	17	37	32	86
Total Feb.	68	68	157	293
Total Jan.	48	91	152	291
Difference	20	23	5	2

WELLS COMPLETED

CRANE COUNTY

Collett-University, Church & Fields 1.. 240
University-E, Tidal Oil Co. 3..... 100
Dewell-University, Church & Fields 5... 200
Cowden Bros. & Co., C. C. Duffey et al 7 400
Dewell-University-E, Humble O. & R. Co. 1 395

Completions 5
Production 1335

CROCKETT COUNTY

L. P. Powell, Cushing R. & G. Co. 3.... 164

CULBERSON COUNTY

Grisham-Hunter, Grisham-Hunter 1.... dry

ECTOR COUNTY

University-S, Landreth Prod. Corp. 1.. 840
University-T, Landreth Prod. Corp. 1.. gas
University-B, Cosden Oil Co. 1.....1707
University-A, Cosden Oil Co. 1.....1085

Completions 4
Production 3632
Gas wells 1

FISHER COUNTY

Stephenson, Mid-Kansas & Phillips Pet. Co. 1 ..... dry

GLASSCOCK COUNTY

R. C. Coffee, Amerada Pet. Corp. 1....1632
J. W. Baker, Kirby Pet. Co. et al 2...1273
J. W. Baker, Kirby Pet. Co. et al 3.... 960

Completions 3
Production 3865

HOWARD COUNTY

H. R. Clay-A, Continental Oil Co. 13.. 15
Dora Roberts, Laurel & Cosden 12.... 38
Dora Roberts, Laurel & Cosden 16.... 18
Dora Roberts-A, Schermerhorn Oil Co. 1 16
Dora Roberts-E, Moody Corp. 21..... 60
Dora Roberts, Ward Oil Co. 20..... 492
Otis Chalk, Otis Chalk 7..... 150
A. J. Hooks, Pure Oil Co. 3..... 35
Kloh et al, Schermerhorn Oil Co. 2....2160
H. R. Clay, Gulf Production Company 10 120

Completions 10
Production 3104

IRION COUNTY

Henrietta C. Fuller, Cromwell et al 1.. dry

JONES COUNTY

Stephens, Cranfill & Reynolds & The California Co. 1..... dry
King, F. E. Shaheen 1..... dry

KIMBLE COUNTY

Cannon, McLean & Jamison 1..... dry

MENARD COUNTY

Callan City Co., Barnett et al 2..... gas

MITCHELL COUNTY

W. L. Foster, Lse. 1, The California Co. 8 ..... dry
W. T. Scott et al, Gibson & Johnson 2...dry

PECOS COUNTY

Mrs. F. E. Torborg, Cardinal Oil Co. 2 360
Mrs. F. E. Torborg, Cardinal Oil Co. 3 300
University-I, Landreth Prod. Corp. et al 1 4
University-A, Continental Oil Co. 2.... dry
White & Baker, Harrison & Cromwell 1 dry
Mrs. M. A. Smith, Humble O. & R. Co. 13 1560
J. W. Phelps, Independent O. & C. Co. et al 1 ..... dry
Belgrade Ranch Co., Kirby Pet. Co. 1.. dry
University-E, Landreth Prod. Corp. & Henshaw Bros. 2 85
University-F, Landreth Prod. Corp. & Henshaw Bros. 3 60
Cordova Union Land Co., Mazda Oil & Gas Co. 1 ..... dry
Mrs. M. A. Smith, Lse. 1, Sec. 21, The California Co. 6.....1824
Mrs. M. A. Smith, Lse. 1, Sec. 37, The California Co. 6..... 51
Smith, Transcontinental Oil Co. & Ark. Fuel Oil Co. 1..... 150
M. A. Smith et al Tr-B, Gulf Prod. Co. 22 17280
University, Amerada Pet. Corp. 1..... 45
University-A, Arkansas Fuel Oil Co. 1 960
J. C. & D. H. Cunningham, E. W. Bateman et al 1..... dry
L. L. Byrne, Buell & Hagan 1..... gas
Mrs. F. E. Torborg, Cardinal Oil Co. 4 30
Mrs. F. E. Torborg, Cardinal Oil Co. 5 30
Mrs. M. A. Smith, Cosby Prod. & Royalty Co. 3 125
Pecos Valley Oil Co., Freeman & Miller 1 ..... dry
J. H. Tippett-A, Southern Crude Oil Pur. Co. 1..... 160
University, Taylor-Link Oil Co. 13..... 85
T. J. Byrne, Phillips Pet. Co. 1..... dry
Cordova Union Land Co., E. W. Bateman et al 1..... dry
John T. Seliman, Geyer & Frates 1.... dry
University-B, Landreth Prod. Corp. & World Oil Co. 7..... 672
University-Bower, Skelly Oil Co. 1..... 80

Completions 30
Production 23861
Dry holes 10
Gas wells 1

PRESIDIO COUNTY

W. W. Bogel, T. P. Coal & Oil Co. 1.... dry

REAGAN COUNTY

University, Big Lake Oil Co. 176..... 5

UPTON COUNTY

Ed. S. Hughes, Pure Oil Co. 4..... 42
Ed. S. Hughes, Snowden & McSweeney 3 25
R. Ricker, Humble Oil & Refg. Co. 14.. 184

Completions 3
Production 251

WARD COUNTY

Townsite, Fugler et al 1..... gas
Geo. H. Coates et al, Mid-Continent Pet. Corp. 1 ..... dry

Completions 2
Production 40
Dry holes 1
Gas 1
Gas production 250,000

WINKLER COUNTY

J. B. Walton-B, Humble O. & R. Co. 2 397
M. J. Bashara, M. J. Bashara 2..... 35
Grisham-Hunter-A, Shell Pet. Corp. 1 (2nd completion) 425

Completions 3
Production 857

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rig	Drg.	Ttl.
Mirando	14	845	7	2	6	25	31
Darst Creek	41	50,724	3	0	8	17	25
Saxet	1	0	1	0	0	0	0
Miscellaneous	20	1,756	16	0	25	77	102
Total Feb.	76	53,325	27	2	39	119	158
Total Jan.	76	30,334	31	15	46	131	177
Difference	0	22,391	4	13	7	12	19

WELLS COMPLETED

KOHLER FIELD—DUVAL COUNTY

Kohler, Humble O. & R. Co. 40 50
Peters, Allied Gas Co. 1..... gas
Dinn, Simms Oil Co. 8..... gas

COLE POOL

Brennan-Benavides, Magnolia Pet. Co. 1 185

JENNINGS POOL—ZAPATA COUNTY

Cuellar, O. W. Killam 19..... 500
F. G. Martinez, O. W. Killam 2..... abd

MAGNOLIA-COLE POOL—WEBB COUNTY

Bruni, O. W. Killam 17..... abd

CAROLINA-TEXAS FIELD

Webster, Foster Barnsley 7..... 75

HENNE-WINCH-FARISS—JIM HOGG

Holbien, Geo. S. Marshall 4..... abd
Holbien, Geo S. Marshall 5..... abd

RANDADO

Palacious, Randado Oil Corp. 35

WILDCATS

Kelsey, Deep Rock Oil Co. 1..... abd
Jones, L. M. Holden 4..... abd

WILDCATS—STARR COUNTY

Margo, Adams, Scanlon, Scanlon & Wright 1 ..... abd

Wells completed 14
Production 845
Dry 7
Gas 2
Gas production 60,000,000

DARST CREEK—GUADALUPE

Dix, Magnolia Pet. Co. 5 1125
Dowdy, Empire G. & F. Co. 2 525
Miller, Trinity Drillers 1-C 250
Denman, Humble O. & R. Co. 9-A 600
R. C. Appling, Cranfill & Reynolds 1.. abd
Dix-McKean, United North & South 2-A 1200
Rand Miller, Magnolia Pet. Co. 2 500
Knoblock, Gulf Prod. Co. 1 9000
Dix-McKean, United North & South 1-B 2400
S. M. Roamel, The Texas Co 1 ..... abd
L. Anderson, The Texas Co. 4..... 840
Knoblock, The Texas Co. 3-B 3900
M. E. Roamel, Magnolia Pet. Co. 3 1500
Denman, Humble O. & R. Co. 8-A 800
Dix-McKean, Gulf Prod. Co. 4 528
Dix-McKean, Gulf Prod. Co. 2 1200
Thos. Dix, Gulf Prod. Co. 2 7800
Miller, Trinity Drillers 1-B 500
Tadlock, Humble O. & R Co. 1 125
Dix, Magnolia Pet. Co. 4 700
Posey-Baker, Gulf Prod. Co. 1 400
Posey-Baker, Gulf Prod. Co. 2 600
Henry Willie, The Texas Co. 3 1000
Henry Willie, The Texas Co. 2 1000
Parrish, The Texas Co. 1 850
A. E. Dowdy, The Texas Co. 1 750
Knoblock, Sun Oil Co. 2 1100
Posey-Baker, Gulf Prod. Co. 3 400
Knoblock, Sun Oil Co. 1 298
Denman, Humble O. & R. Co. 6-A 850
Dowdy, Empire G & F. Co. 3 400
Denman, Humble O. & R. Co. 4-A 1750
Denman, Humble O. & R. Co. 7-A 750
Dowdy, Humble O. & R. Co. 1 500
Dallas-Wilson, The Texas Co. 5 335
Knoblock, The Texas Co. 2-B 840
Annie Knodel, Magnolia Pet. Co. 1 ...1992
Thos. Dix, Magnolia Pet. Co. 6 2232
Dix-McKean, Gulf Prod. Co. 3 984
S. M. Roamel, Magnolia Pet Co. 1 ... abd
P. Roamel, The Texas Co. 3 200

Wells completed 41
Production 50,724
Dry 3

REFUGIO COUNTY—REFUGIO FIELD

Morgan-Vance, Houston Gulf Gas Co. 2 500
Fee, Rutherford & Traylor 1 800
Cable, Saxet Oil Co. 1 1100
Fee, Rutherford & Traylor 1 800
City of Refugio, Morgan Oil Co. 4 ... 800
Rea, Houston Oil Co. 2 500
Pratt-Hewitt-Rooke, Houston Oil Co. 11 ..... gas
Pratt-Hewitt-Rooke, Houston Oil Co. 12 200
Claud Heard, Pearson Prop., Inc. 1 900

Wells completed 3
Production 5400
Gas 1
Gas production 50,000,000

NUECES COUNTY—SAXET POOL

Dunn, Saxet Gas Co. 5 ..... abd

MISCELLANEOUS WILDCATS

Williamson County—
Abbott, E. L. Chapman 1 1000

Maverick County—
J. M. Chittim, Rycade Oil Corp. 4 .... abd

Bexar County—
W. Kelso, Dingman Drlg. Co. 1 ..... abd
L. Sandemer, F. H. Eckert & Son 1 .. 6

Atascosa County—
Fee, Alexander Boynton 1 ..... abd

Bastrop County—
J. A. Cox, Johnson Bros. 1 ..... abd

Caldwell County—
Crenshaw, J. Harper et al 1 50
W. F. Thomas, W. H. Harper 3 ..... abd

Bee County—
J. J. McKinney, Houston Oil Co. 1 ... 700

Gonzales County—
R. D. and J. C. Miller, Joe Bruner 1.. abd
J. A. Kerr, United North & South 1.. abd
F. H. Frampton, Linderman Bros. 2 .. abd
B. B. Dix, A. G. Keiffer 1 ..... abd

Karnes County—
S. E. Crews, Benedum & Trees 1 .... abd

Guadalupe County—
O. J. Halm, Pagenkopf-Kennon 1 .... abd

Goliad County—
T. A. Fromme, Compton Oil Co. 1 .... abd

Zavala County—
Childress, Tritex Oil Co. 2 ..... abd
Clay Burns, Tritex Oil Co. 1 ..... abd
West, Texas G. & F. Co. 2 ..... abd

Blanco County—
Ashe & Marshall 1 ..... abd

Wells completed 20
Production 1756
Dry 16

ARKANSAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rigs	Drg.	Ttl.
Ashley	0	0	0	0	0	1	1
Cleburne	0	0	0	0	2	2	2
Columbia	0	0	0	0	0	2	2
Drew	0	0	0	0	0	1	1
Faulkner	0	0	0	0	1	0	1
Garland	0	0	0	0	0	1	1
Grant	1	0	1	0	0	0	0
Johnson	0	0	0	0	0	1	1
Little River	0	0	0	0	0	2	2
Logan	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Nevada	0	0	0	0	1	1	2
Ouachita	2	66	1	0	2	9	11
Pike	0	0	0	0	0	1	1
Pope	0	0	0	0	1	2	3
Prairie	0	0	0	0	0	1	1
St. Francis	0	0	0	0	0	1	1
Union	4	115	2	0	6	15	21
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	0	4	4
White	0	0	0	0	0	1	1
Total Feb.	7	181	4	0	11	48	59
Total Jan.	12	711	5	0	10	46	56
Difference	5	530	1	0	1	2	3

WELLS COMPLETED

GRANT COUNTY

5-4-11 Meek, Jones & Watkins 1 .... dry

OUACHITA COUNTY

18-14-16 Fogle, Chas. McDonald 1 .... dry
34-15-15 Powell, Standard Oil Co. 11 .. 66

Production 66
Dry 1

UNION COUNTY

13-16-15 Simmons, S. Y. Dorfman 1 ... dry
1-17-14 J. M. Gregory, Ohio Oil Co. 1 100
4-16-15 Calloway, Root Refineries, Inc. 8 ..... dry
6-18-15 Lacy, Weisinger & Ball 1 15

Wells completed 4
Production 115
Dry 2

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rigs	Drg.	Ttl.
Avoyelles	0	0	0	0	1	0	1
Bossier	10	3,257	4	0	34	16	50
Caddo	6	112	1	0	4	15	19
Catahoula	0	0	0	0	0	1	1
Claiborne	0	0	0	0	1	3	4
Concordia	0	0	0	0	0	1	1
DeSoto	1	0	1	0	1	3	4
Franklin	0	0	0	0	0	3	3
LaSalle	0	0	0	0	1	4	5
Morehouse	5	0	3	2	1	6	7
Natchitoches	0	0	0	0	0	3	3
Ouachita	4	0	0	4	11	8	19
Rapides	0	0	0	0	0	1	1
Red River	1	0	0	1	1	1	2
Richland	5	0	2	3	7	19	26
Sabine	4	5,565	1	0	21	26	47
Tensas	0	0	0	0	0	1	1
Union	0	0	0	0	2	3	5
Webster	4	60	2	1	3	9	12
West Carroll	0	0	0	0	0	2	2
Total Feb.	40	8,994	14	11	88	125	213
Total Jan.	55	517	13	23	60	119	179
Difference	15	8,477	1	12	28	6	34

*Gas production: Morehouse, 32,300,000; Ouachita, 15,403,000; Richland, 163,119,000; Webster, 4,500,000; total, 219,822,000 feet.

WELLS COMPLETED

BOSSIER PARISH

31-23-11 Bollinger, Del.-La. Dev. Co. 2 dry
25-23-12 J. W. Peyton, H. L. Hunt 2 (La. Pet. Corp.) 625
25-23-12 J. W. Peyton, La. Pet. Corp. and H. L. Hunt 3 1000
21-23-12 M. A. Rogers, Magnolia Pet. Co. 1 ..... dry
28-19-11 Wetherbee, H. I. Morgan et al 2 ..... dry
25-23-12 Barrett, Muslow Oil Co. 1 ... dry
31-23-11 Kilgore, Muslow Oil Co. 1-B.. 772
7-19-13 McFarlin, Simon Goldman 1.. dry
36-23-12 Wilkerson, The Texas Co. 1 .. 140
30-23-11 Peyton, The Texas Co. 3 720

Wells completed 10
Production 3257
Dry 4

CADDO PARISH

21-22-15 Owens, Bayou State Oil Corp. 5 25
34-21-16 Levee Board, Gulf Ref. Co. 23-A 50
10-19-14 Dickson, Lide et al 1..... 15
1-20-16 La. Oil Ref. Corp., P. T. Mize 1 10
15-20-15 Tom Thomas, Simplex Oil Co. 6 12
16-19-15 Henderson L. & T. Co., The Texas Co. 1 ..... dry

Wells completed 6
Production 112
Dry 1

DESOTO PARISH

27-12-11 Anna Mason, Magnolia Pet. Co. 1 ..... dry

MOREHOUSE PARISH

34-21-5 Haynes, J. B. Bond 1 ..... gas
16-20-4 White, Cons. Carbon Co. 2 ..... gas
2-20-4 Patton, United Carbon Co. 2 (loc.) ..... abd
2-20-4 Patton, United Carbon Co. 3 (loc.) ..... abd
32-19-6 Ches Wymond, J. P. White 1.. dry

Gas production 33,300,000
Abandoned 1
Dry 1

OUACHITA PARISH

43-19-4 Cole, Amalgamated Carbon Co. 2 gas
25-20-4 Fairbanks, Hope Prod. Co. 1 .. gas
20-19-5 U. S. Gov't., Magnolia Pet. Co. 4 gas
35-20-4 Cole, New Process Carbon Co. 2 gas

Gas production 15,403,000

RED RIVER PARISH

17-12-10 Johnson, Eylers O. & G. Co. 1 gas

Gas production 3,500,000

RICHLAND PARISH

34-17-6 A. E. Purvis, Ark.-La. P. L. Co. 1 ..... gas
31-16-6 E. L. Wilson, W. C. Feazel 1.. gas
3-16-6 C. M. Purvis, Hope Prod. Co. 1 gas
16-17-7 G. L. Cumpton, Triangle Drlg. Co. 1 (junked) ..... dry
32-18-7 A. S. Bule, Woodley Pet. Co. 1 dry

Wells completed 5
Gas production 163,119,000
Dry 2

SABINE PARISH

31-8-12 Sabine Lbr. Co., Lide et al 1 ..5000
35-8-12 Bowman-Hicks Lbr. Co., Ohio Oil Co. 1 145
33-8-12 Bowman-Hicks Lbr. Co., Ohio Oil Co. 2 420
36-8-12 Hughes, Tippett Drlg. Co. 1 ... dry

Wells completed 4
Production 5565
Dry 1

WEBSTER PARISH

1-22-11 J. E. Womble, E. W. Bateman, trustee 1 60
19-23- 9 Roseberry, Donohoe O. & G. Co. 1 (made 104-foot hole) .... abd
28-21-10 Bodcaw, Ohio Oil Co. 46 .... gas
20-20- 9 Martin, Paul C. Warren et al 1 dry

Wells completed 4
Production 60
Gas 1
Dry 2
Gas production 4,500,000

EAST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rigs	Drg.	Ttl.
Camp	0	0	0	0	0	1	1
Marion	0	0	0	0	1	0	1
Panola	3	0	1	2	1	6	7
Red River	0	0	0	0	0	3	3
Shelby	0	0	0	0	0	2	2
Total Feb.	3	0	1	2	2	12	14
Total Jan.	5	0	1	4	3	12	15
Difference	2	0	0	2	1	0	1

*Gas production: Panola 9,000,000.

WELLS COMPLETED

PANOLA COUNTY

B. C. Jordan Sur.; Roquemore, S. H. Gardner 4 (loc.) ..... abd
E. F. Mitcheson Sur.; Brumble, Nemours Corp. 4 ..... gas

James Storey Sur.; Tiller, D. Thomason 4 ..... gas

Gas production 9,000,000

EAST CENTRAL TEXAS

County—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Anderson	0	0	0	0	1	7	8
Angelina	0	0	0	0	0	1	1
Cherokee	0	0	0	0	0	1	1
Freestone	0	0	0	0	1	2	3
Grimes	0	0	0	0	1	0	1
Hill	0	0	0	0	0	1	1
Limestone	0	0	0	0	0	3	3
Navarro	0	0	0	0	0	1	1
Rusk	0	0	0	0	0	1	1
Smith	0	0	0	0	0	2	2
Van Zandt	4	5,230	0	0	5	9	14
Woods	0	0	0	0	0	1	1
Total Feb.	4	5,230	0	0	8	29	37
Total Jan.	10	475	7	0	4	30	35
Difference	6	4,755	7	0	4	1	2

WELLS COMPLETED
VAN ZANDT COUNTY

Mayers, Pure Oil Co. 1 1800
Wells, Pure Oil Co. 1 1220
Fowler, Pure Oil Co. 1-A 1710
Tunnell, The Texas Company 1 500

Wells completed 4
Production 5220

ALABAMA

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Lamar	0	0	0	0	0	1	1
Lauderdale	0	0	0	0	1	0	1
Marion	0	0	0	0	1	0	1
Sumpter	1	0	1	0	0	0	0
Washington	0	0	0	0	0	2	2
Total Feb.	1	0	1	0	2	3	5
Total Jan.	0	0	0	0	2	4	6
Difference	1	0	1	0	0	1	1

WELLS COMPLETED
SUMPTER COUNTY

3-18-1 Fee, B. W. Bates 3 ..... dry

GULF COAST FIELDS

Summary of Field Operations
Texas

	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Barbers Hill	7	3,090	1	0	4	22	26
Batson	1	0	1	0	0	2	2
Big Creek	0	0	0	0	0	3	3
Blue Ridge	0	0	0	0	0	2	2
Boling	0	0	0	0	0	1	1
Damon Mound	1	500	0	0	0	0	0
DeWalt	2	1,500	0	0	1	2	3
Fannett	1	0	1	0	1	3	4
Goose Creek	0	0	0	0	0	2	2
High Island	1	240	0	0	1	2	3
Hull	2	750	0	0	1	5	6
Humble	6	5,035	0	0	1	9	10
Liberty	3	0	3	0	1	1	2
Lost Lake	2	675	1	0	0	2	2
Nash	0	0	0	0	0	1	1
North Dayton	0	0	0	0	0	4	4
Orange	0	0	0	0	0	2	2
Orchard	0	0	0	0	0	1	1
Pierce Junc.	2	1,845	1	0	0	8	8
Port Neches	1	2,000	0	0	0	1	1
Raccoon Bend	7	1,030	1	1	7	2	9
Refugio	19	11,180	2	2	6	43	49
Saratoga	2	0	2	0	0	1	1
Sheeks	2	380	0	0	1	2	3
Sour Lake	0	0	0	0	0	3	3
Spindletop	4	1,500	2	0	1	5	6
W. Columbia	6	0	0	0	1	1	2
Miscellaneous	4	200	3	0	6	29	35
Total Feb.	67	29,925	18	3	32	159	191
Total Jan.	101	50,944	32	6	35	147	182
Difference	34	21,019	14	3	3	12	9

South Louisiana

Anse La Butte	0	0	0	0	0	1	1
Bayou Blue	0	0	0	0	1	0	1
Bayou Boullion	0	0	0	0	0	3	3
Black Bayou	0	0	0	0	1	2	3
Edgerly	1	50	0	0	0	3	3
Hackberry	1	0	1	0	0	4	4
Jennings	1	0	1	0	0	4	4
Lockport	0	0	0	0	1	2	3
Port Barre	2	3,800	0	0	2	0	2
Sorrento	0	0	0	0	0	1	1
Starks	0	0	0	0	0	0	0
Sulphur	3	375	2	0	0	3	3
Sweet Lake	0	0	0	0	0	2	2
Vinton	2	235	0	0	0	2	2
Miscellaneous	5	0	5	0	4	18	22
Total Feb.	15	4,460	9	0	9	45	54
Total Jan.	24	7,114	14	0	9	44	53
Difference	9	2,654	5	0	0	1	1

Gulf Coast

Total Feb.	52	34,385	27	3	41	204	245
Total Jan.	125	58,058	46	4	44	191	235
Difference	43	23,673	19	1	3	13	10

WELLS COMPLETED
TEXAS
BARBERS HILL—CHAMBERS COUNTY

Means, Mills Bennett Production Co. 2 ..1740
Smith, Mills Bennett Production Co. 3 .. 100
Woodward, McAlbert Oil Co. 4 500
Wilburn, Sun Oil Co. 2 50
Phillips, Yount Lee Oil Co. 2 600
Chambers, Yount Lee Oil Co. 11 100
Chambers, Yount Lee Oil Co. 12 ..... abd

Wells completed 7
Production 3090
Abandoned 1
BATSON—HARDIN COUNTY
Fee, D. L. Williams 1 ..... abd
DAMON MOUND—BRAZORIA COUNTY
Wisdom, L. & M. Co. 5 500
DE WALT—FORT BEND COUNTY
Brazos, Humble Oil & Refining Co. 11 .. 900
Bankers Mortgage, Humble Oil & Refining Co. 2-B 600

Wells completed 2
Production 1500
FANNETT—JEFFERSON COUNTY
Thomas, Gulf Production Co. 1-A .... abd
HIGH ISLAND—GALVESTON COUNTY
Cade, Marrs McLean 12 240
HULL—LIBERTY COUNTY
Barngrover, Empire Gas & Fuel Co. 11 500
Guedry, Humble Oil & Refining Co. 25 250

Wells completed 2
Production 750
HUMBLE—HARRIS COUNTY
Bissonet, John A. Deering 5 1700
Williams, Humble Oil & Refining Co. 8 950
Trahon, Humble Oil Refining Co. 2 280
Dunman, The Texas Company 2 500
Carroll, The Texas Company 30 2520
Foster, West Production Co. 2 1500

Wells completed 6
Production 7450
LIBERTY—LIBERTY COUNTY
Mitchell, Sun Oil Co. 54 ..... abd
Green, The Texas Company 5 ..... abd
Clarion, Vacuum Oil Co. 1 ..... abd

Wells completed 3
Production 0
Abandoned 3
LOST LAKE—CHAMBERS COUNTY
Mayes, Pure Oil Co. 4 ..... abd
Mayes, Pure Oil Co. 9 675

Wells completed 2
Production 675
PIERCE JUNCTION—HARRIS COUNTY
Seitegast, Rio Bravo Oil Co. 1-B 1845
Herman, Saxet Oil Co. 5 ..... abd

Wells completed 2
Production 1845
PORT NECHES—ORANGE COUNTY
Polk, The Texas Company 2 2000
RACCOON BEND—AUSTIN COUNTY
Urban, Humble Oil & Ref. Co. and Valley Oil Corp. 6 300
Urban, Humble Oil & Ref. Co. and Valley Oil Corp. 8 65
Jackson, Humble Oil & Ref. Co. and Valley Oil Corp. 3 390
Mueller, Humble Oil & Ref. Co. and Valley Oil Corp. 8 75
Mahnke, Humble Oil & Ref. Co. and Valley Oil Corp. 2 ..... gas
Austin, Humble Oil & Ref. Co. and Valley Oil Corp. 5 200

Wells completed 7
Production 1030
Abandoned 1
Gas 1
REFUGIO—REFUGIO COUNTY
Rutherford, Herman F. Heep 1 1800
Lambert, Houston Gulf Gas Co. 1 300
Shelly, Houston Gulf Gas Co. 9 ..... abd
Morgan-Vance, Houston Gulf Gas Co. 2. 450
Cummings, Houston Gulf Gas Co. 3 150
O'Brien, Houston Gulf Gas Co. 6 ..... gas
Rea, Houston Oil Co. 2 350
J. F. B. Heard, Independent Oil & Gas Co. 2-B ..... gas
West, Independent Oil & Gas Co. 2 650
Reilly, Independent Oil & Gas Co. 6 50
Claude Heard, Independent Oil & Gas Co. 2 1400
Strauch, Larco Oil Co. 2 1130
Fox, Morgan Oil Corp. 1 1200
Hornburg, Morgan Oil Corp. ..... abd
Swift, Morgan Oil Corp. 3 600
City, Morgan Oil Corp. 4 800
Block 77, Rutherford-Traylor Oil Co. 1. 850
Calle, Saxet Oil Co. 1 1050
J. F. B. Heard, Union Producing Co. 2. 400

Wells completed 19
Production 11,180
Abandoned 2
Gas 2
SARATOGA—HARDIN COUNTY
Cotton, Rio Bravo Oil Co. 89 ..... abd
Cotton, Rio Bravo Oil Co. 89-A ..... abd

Wells completed 2
Production 0
Abandoned 2
SHEEKS—LIBERTY COUNTY
Esperson, Cranfill-Reynolds Oil Co. 4-A. 300
Esperson, Cranfill-Reynolds Oil Co. 6-A.. 80

Wells completed 2
Production 380
SPINDLETOP—JEFFERSON COUNTY
McFaddin, Yount Lee Oil Co. 75 540
McFaddin, Yount Lee Oil Co. 120 ..... abd
McFaddin, Yount Lee Oil Co. 123 960
Gladys City, Yount Lee Oil Co. 13 .... abd

Wells completed 4
Production 1500
Abandoned 2
MISCELLANEOUS TEXAS
BRAZORIA COUNTY
Allen—Allen, Mills Bennett Production Co. 1 200
JEFFERSON COUNTY
Ship Channel, River Oil Corp. 1 ..... abd
ORANGE COUNTY
Reed, Veteran Oil Co. 1 ..... abd
WASHINGTON COUNTY
Kanas, L. O. Gleason 1 ..... abd

Wells completed 4
Production 200
Abandoned 3
SOUTH LOUISIANA
EDGERLY—CALCASIEU PARISH
Reed, Strange Oil Co. 1 50
HACKBERRY—CAMERON PARISH
Lacey, Star Petroleum Co. 1 ..... abd
JENNINGS—ACADIA PARISH
Simms fee, Yount Lee Oil Co. 1 ..... abd
PORT BARRE—ST. LANDRY PARISH
Ovide Lahaye, Gulf Refining Co. 1.....2300
Botney Bay, The Texas Company 4 ...1500

Wells completed 2
Production 3800
SULPHUR—CALCASIEU PARISH
Fee, Union Sulphur Co. 733 ..... abd
Fee, Union Sulphur Co. 754 ..... abd
Fee, Union Sulphur Co. 758 375

Wells completed 3
Production 375
Abandoned 2
VINTON—CALCASIEU PARISH
Star-Vincent, Gulf Refining Co. 49 125
Vinton, Wilson-Broach 1 110

Wells completed 2
Production 235
MISCELLANEOUS LOUISIANA
CAMERON PARISH
Mallard Bay—Marceaux, Shell Petroleum Corp. 1 ..... abd
ASCENSION PARISH
Lacey, Triumph Oil Corp. 2 ..... abd
ASSUMPTION PARISH
Labarre, Poor Boys Drilling Co. 1 ..... abd
LA FOURCHE PARISH
Thibodaux—Stark, Gulf Refining Co. 25 abd
PLAQUEMINE PARISH
Garden Island—State, The Texas Company 3 ..... abd

Wells completed 6
Production 0
Abandoned 5

MISSISSIPPI

	Rigs	Dlg.	Ttl.
Alcorn	0	1	1
Chickasaw	0	1	1
Harrison	1	0	1
Hinds	0	3	3
Humphreys	0	1	1
Lafayette	0	1	1
Lauderdale	1	2	3
Lincoln	0	1	1
Monroe	0	3	3
Warren	0	1	1
Yalobusha	0	1	1
Yazoo	0	1	1
Total Feb.	2	16	18
Total Jan.	2	16	17
Difference	1	0	1

KENTUCKY

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	2	7	0	0	0	0	0
Ohio	31	594	13	1	6	23	29
Daviess	16	120	12	1	1	10	11
Hancock	1	5	0	0	0	3	3
McLean	0	0	0	0	0	3	3
Webster	0	0	0	0	0	3	3
Henderson	1	0	0	1	0	12	12
Muhlenberg	2	45	0	1	0	9	9
Hopkins	1	0	0	1	0	7	7
Butler	0	0	0	0	1	1	2
Christian	0	0	0	0	2	3	5
Breckenridge	0	0	0	0	1	1	2
Union	0	0	0	0	0	1	1
Cumberland	0	0	0	0	0	2	2
Logan	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Wayne	4	0	4	0	0	3	3
Powell	0	0	0	0	0	1	1
Estill	0	0	0	0	0	3	3
Morgan	1	2	0	0	0	0	0
Lee-Owsley	0	0	0	0	0	2	2
Johnson-Magoffin	2	11	0	0	1	6	7
Floyd	0	0	0	0	0	1	1
Clay	2	0	0	2	0	0	0
Jackson	1	0	1	0	1	0	1
Knox	1	0	0	1	0	1	1
Perry	1	0	0	1	0	0	0
Total Feb.	66	784	30	9	13	98	111
Total Jan.	61	1,245	15	6	8	107	115
Difference	5	461	15	3	5	9	4

WELLS COMPLETED
WARREN COUNTY

Bowling Green—E. Morgan, Morrow & Hays 11 5
John Q. Adams, O. C. Wood 4 2

Wells completed 2
Production 7
OHIO COUNTY
Hartford—T. P. Royal 60, T. P. Royal & Co. 12 50
Pate Royal, H. L. Ogle & Co. 23 20
Pate Royal, H. L. Ogle & Co. 24 25
Pate Royal, H. L. Ogle & Co. 25 30
Pate Royal, H. L. Ogle & Co. 26 30
E. M. Royal, Louisville Gas & Electric 2 ..... dry
R. A. Miller, Louisville Gas & Electric 4 ..... dry
Royal Hrs., Jas. C. Ellis & Co. 4 15
Royal Hrs., Jas. C. Ellis & Co. 5 8
Greer Hrs., Jas. C. Ellis & Co. 1 ..... dry
Greer Hrs., Jas. C. Ellis & Co. 2 6
G. M. Burdette, Jas. C. Ellis & Co 2.. 35
Clarence Ford, Jas. C. Ellis & Co. 1.. dry
E. M. Royal, Louisville Gas & Electric 1 10
Sis Bellamy, Jenkins & Co. 2 ..... dry
Will Hartford, Rhodes & Co. 1 ..... gas
W. G. Kirk, George Randolph & Co. 1 5
Earnest Bickett, D. J. White & Co. 5 dry
W. B. Kelley 105-a, The Ohio Oil 13.. 40
Whittaker Hrs., The Ohio Oil 6 35
Frank House, Dixon & Co. 1 ..... dry
S. J. Lloyd, Kemrow-Cumberland Co. 1 100
Ernest Patton, Kemrow-Cumberland Co. 1 20
Joe Madden, Kemrow-Cumberland Co. 5 15
H. Biven, P. A. Stevens & Co. 1 ..... dry
C. W. Newton, Boop & McDonough 1 dry
Lydia Carter, J. M. Meredith & Co. 1 dry
J. A. Stewart, Hupp, Duff & Co. 4.. dry
Nancy C. Wigginton, C. M. Root & Co. 6 150
Clay Edwards, H. C. Smith & Co. 1.. dry
Homer Morton, L. C. Young, 1 ..... dry

Wells completed 31
Production 594
Dry 13
Gas 1
DAVIESS COUNTY
Owensboro—J. M. Clark, Evans & Garrison, 1 ..... dry
J. McCormick, Cumberland Petroleum 1 ..... dry
W. B. McCormick, Cumberland Petroleum 1 ..... dry
J. Frank Bruner, Rhodes & Co. 1 ..... dry
James Sloan, Jess G. Watts 1 ..... dry
Howard Wright, Imperial Oil & Gas Products 1 ..... dry
W. S. Neal, Mecca Oil 4 ..... dry
Frank Barrett, Bane & Ogle 1 ..... dry
Hunter Bell, Standard Oil of Kentucky 1 ..... dry
Ed Burnett, Smith, Randolph & Co 1 dry
W. V. Lewis, Jetsan Oil 2 ..... dry
Heubner, Unknown 1 ..... gas
Roy Hudson, Wha-Sha-Shee Oil 1 25
J. M. Clark, Petroleum Exploration 3 70
Ethel Chapman, Eastern Gulf Oil 3.. dry
Ethel Chapman, Eastern Gulf Oil 4.. 25

Wells completed 16
Production 120
Dry 12
Gas 1
HANCOCK COUNTY
Pellville—Hancock Lumber & Dev. A. S. McClintick & Co. 3 5
HENDERSON COUNTY
Niagara—Griffin, Missouri-Kansas Pipe Line 1 ..... gas
MUHLENBERG COUNTY
Greenville—Robertson, Missouri-Kansas Pipe Line 1 ..... dry
John W. Drake, C. A. Dally & Co 1.. 45

Wells completed 2
Production 45
Dry 1
HOPKINS COUNTY
Madisonville—Lester, Missouri-Kansas Pipe Line 2 ..... gas
WAYNE COUNTY
District 2—State Nat. Bank, Vulcan Oil 25 ..... dry
Louis Sheffield, Johnson Oil 1 ..... dry
District 3—Silas Bell, Smith-Cameron Co. 3 ..... dry
District 13—F. H. Upchurch, M. D. Shearer 1 ..... dry

Wells completed 4
Dry 4
MORGAN COUNTY
District 6—V. P. Haney, Upper, W. H. Collier 3 2
JOHNSON-MAGOFFIN COUNTIES
District 27—Vanderpool Dowery, Mosbald Dev. 1 8
District 29—Chas. Wheeler, Peoples-Pittsburg Trust 2 3

Wells completed 2
Production 11
CLAY COUNTY
Manchester—Lillie Peters, Petroleum Exploration 1 ..... gas
Gilbert Baker, Petroleum Exploration 1 ..... gas

Wells completed 2
Gas 2
JACKSON COUNTY
McKee—Walfork Land Co. Petroleum Exploration 3 ..... dry
KNOX COUNTY
Barboursville—Gillam, Oklahoma parties 1 ..... gas
PERRY COUNTY
Hazard—Unknown, J. T. Justice 1.... gas

ROCKY MOUNTAIN AREA

COLRADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rig	Drg.	Ttl.
Boulder	0	0	0	0	0	5	5
Fremont	1	0	1	0	1	13	14
Jackson	0	0	0	0	0	5	5
Larimer	0	0	0	0	2	7	9
Las Animas	1	0	1	0	2	3	5
Moffat	0	0	0	0	8	8	16
Pueblo	0	0	0	0	1	2	3
Rio Blanco	0	0	0	0	0	2	2
Routt	0	0	0	0	2	0	2
Yuma	0	0	0	0	0	2	2
Miscellaneous	0	0	0	0	2	31	33
Total Feb.	2	0	2	0	18	78	96
Total Jan.	6	165	4	0	21	77	98
Difference	4	165	2	0	3	1	2

WELLS COMPLETED
Wells Completed

8-19-70 Empire Zinc, Continental Oil 2 dry
19-27-59 Hall, Helium Co. 1 ..... dry

Wells completed 2
Dry and abandoned 2

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rig	Drg.	Ttl.
Salt Creek	2	2,195	0	0	2	3	5
Big Horn	1	0	1	0	0	7	7
Carbon	0	0	0	0	0	15	15
Fremont	0	0	0	0	0	7	7
Hot Springs	0	0	0	0	0	4	4
Johnson	0	0	0	0	0	3	3

Lincoln	0	0	0	0	1	6	7
Natrona*	0	0	0	0	0	6	6
Park	3	600	0	2	6	19	25
Sweetwater	0	0	0	0	2	13	15
Uinta	0	0	0	0	3	13	16
Sublet	0	0	0	0	2	18	20
Washakie	1	0	1	0	0	0	0
Miscellaneous	0	0	0	0	5	9	14
Total Feb.	7	2,795	2	2	21	123	144
Total Jan.	11	941	2	1	21	130	151
Difference	4	1,854	0	1	0	7	7

*Exclusive of Salt Creek.

WELLS COMPLETED

31-48-89 Nowood, California Exploration Co. 1 ..... dry
29-51-100 Sonners, Texas Prod. Co. 1 600
2-47-100 State, Grebo Royalties 1 .... gas
33-52-100 Atherly, Charles E. Orchard 1 gas
26-40-79 SW, Midwest Oil Co. 16-SD-3 2,106
34-40-79 NE, Wyoming Associated, 36-SD-3 89
27-57-96 Wilcox, Cody Pet. Co. 1 .... dry

Wells completed 7
Production 2,795
Gas 6,500,000
Dry and abandoned 2

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Chaves	0	0	0	0	0	2	2
De Baca	0	0	0	0	0	2	2
Eddy	3	0	1	2	5	9	14
Lea	8	13,980	2	0	12	18	30
McKinley	0	0	0	0	2	8	10
Rio Arriba	0	0	0	0	1	4	5
San Juan	0	0	0	0	4	11	15
Torrance	0	0	0	0	1	2	3
Miscellaneous	0	0	0	0	3	13	16
Total Feb.	11	13,980	3	2	28	69	97
Total Jan.	13	6,045	5	0	30	75	105
Difference	2	7,935	2	2	2	6	8

WELLS COMPLETED

10-17-30 Parke, Lockart et al 1 ..... dry
21-17-29 Levers, Leonard & Levers 1 .. gas
13-16-30 Etz, Etz Brothers 1 ..... gas
5-21-35 State, Empire Gas & Fuel Co. 3-B ..... dry
30-18-38 Bowers, Humble Oil & Refining Co. 1 8,584
1-21-33 State, Texas Prod. Co. 1-B 286
2-21-33 State, Texas Prod. Co. 2-A .. 1,208
2-21-33 State, Texas Prod. Co. 1-A .. 2,028
33-11-35 State, Buell & Hagen 1 ..... dry
10-19-38 Terry, Midwest Ref. Co. 13 ... 743
10-19-38 Thorpe, Shell Pet. Corp. 1 1,131

Wells completed 11
Production 13,980
Gas 3,000,000
Dry and abandoned 3

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Cat Creek	0	0	0	0	0	1	1
Kevin-Sunburst	3	15	2	0	9	9	18
Pondera	0	0	0	0	1	3	4
Miscellaneous	1	111	0	0	8	67	75
Total Feb.	4	126	2	0	18	80	98
Total Jan.	7	194	3	1	18	78	96
Difference	3	68	1	1	0	2	2

WELLS COMPLETED

2-34-2 Shoemaker, California Co. 2 .... dry
21-35-2 McManus, L. W. Hill 12 15
3-34-2 Bradley, A. H. Campbell 2 .... dry
2-37-4 Farbo, Mid-Cont. O. & R. 1 111

Completions 4
Production 126
Dry 2

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Total Feb.	0	0	0	0	3	32	35
Total Jan.	0	0	0	0	4	30	34
Difference	0	0	0	0	1	2	1

EASTERN FIELDS

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Allegany	35	99	2	1
Bradford*	297	426	0	1
Venango-Clarion	20	18	2	3
Middle Field	5	5	0	0
Butler-Armstrong	10	9	2	2
S. W. Pennsylvania	20	36	5	8
West Virginia	65	406	9	35
Southeast Ohio	55	2,000	12	5
Total Feb.	507	2,999	32	55
Total Jan.	329	1,813	18	53
Difference	178	1,186	14	2

Summary of Work Under Way

Field—	Rigs	Drlg.	Ttl.
Allegany	6	19	25
Bradford	36	93	129
Venango-Clarion	2	15	17
Middle Field	0	3	3
Butler-Armstrong	5	9	14
Southwest Pennsylvania	3	23	26
West Virginia	23	106	129
Southeast Ohio	30	85	115
Total Feb.	105	353	458
Total Jan.	143	370	513
Difference	38	17	55

*95 Bradford Field completions with 52-bbl. production received too late for January report.

WELLS COMPLETED
BUTLER-ARMSTRONG

Gunst, Gunst & Co. 1 ..... dry
Montag, Frederick & Co. 1 1
Hoffman, Hilderbrand et al 1 ..... gas
Forcht, Forcht Bros. 3 2
Raisley, Bureon Bros. & Co. 1 ..... gas
Boelam, John L. Peters et al 6 ..... dry
Mickley, William Sammis 1 2
Byers, Guy Sutton 17 1
McGinnis, L. T. McGinnis 15 2
Seigel, H. J. Crawford 1

Wells completed 10
Production 9
Dry 2
Gas 9

MIDDLE FIELD

Jamieson, Allegheny Gas Co. 1
Wardwell, South Penn Oil Co. 1
Wardwell, South Penn Oil Co. ....pressure
Aspey, Hague & Co. 4 1
Grandin, S. Y. Ramage 22 2

Wells completed 5
Production 5
Dry 0
Gas 0
Pressure 1

VENANGO-CLARION

Simcox, S. Y. Ramage 67 1
Scott, Altman, Berlin et al 3 1
Tract 73, S. Y. Ramage 97 1
P. C. L. & P. Co., Jenkins & Grimm 47 1
Sloan, Santy Oil Co. 10 2
Sloan, Santy Oil Co. 11 2
Hoffman, C. L. Irwin et al 2 ..... gas
Schwab, United Natural Gas Co. 3928 gas
Korb, W. B. and F. E. Kapp 15 ..... gas
Markle, Potts, Hetter et al 2 2
Fisher, H. O. Fisher 4 ..... dry
Klinger, Knight Bros. 1 ..... dry
Meherten, F. C. Deemer 20 1
Meherten, F. C. Deemer 21 1
Melford, South Penn Oil Co. 36 1
Melford, South Penn Oil Co. 37 1
Melscel, C. F. & C. Oil & Gas Co. 10 .. 1
Columbia, Pioneer Oil Co. 14 1
Oil City National Bank, Splane & Co. 38 1
Oil City National Bank, Splane & Co. 39 1

Wells completed 20
Production 18
Dry 2
Gas 3

ALLEGHENY FIELD

Forest Oil Corp., four completions 4
Fee, Herbert Spring 1
Stewart Est., Sepany Oil Co. 15
Lippert, Thropp & Bucher 1
Fee, Joseph Sutter 1
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 1
Fee, N. V. V. Franchot, mgr., trustee 2
Stewart Est., Sepany Oil Co. 20
Kinley Oil Co., W. E. & P. W. Burdick 2
Kurtzhaltz, E. G. & F. W. Stephen 1
Vokel, Stephan, Gallets & Buffington .. 1
Fee, Mary Lippert 2
Forest Oil Corp. 1
Holly, Cook Bros. ..... gas
Fee, Bayard C. Fuller 2
First Natl. Bank Shinglehouse, Currie's Burns 1
Fee, J. M. McDivitt et al 3
Birtcil, First Natl. Bank of Olean 10
Fee, William Bartoo et al 6
Fee, Cuba Natl. Bank 25 2
Fee, Wilbart Oil Co. et al 3
Fee, L. A. Wilson et al 2
Fee, Rich Oil Co. ..... dry
Fee, Sadie Sawyer 3
Fee, Homestead Oil Co. 4
Fee, Charles Phillips ..... dry
Fee, A. C. A. Oil Corp. 1

Wells completed 35
Production 99
Gas 1
Dry 2

BRADFORD FIELD

Forest Oil Corp., one completion 1
Forest Oil Corp., three water wells .... pressure
Forest Petroleum Corp. 14 completions 14
Forest Petroleum Corp. water well..pressure
Hawkins Oil Corp., 2 completions.... 2
Niagara Oil Corp., 35 oil wells 35
Niagara Oil Corp., 39 water wells..pressure
Fee, Mix Creek Oil Co. 2
Fee, Mix Creek Oil Co. ..... pressure
Hoffman, Bell & Loop 1
Fee, D. M. Hoffman estate 1
Fee, G. W. Smith estate 6
Fee, E. D. Kepner Oil Co. 2
Fee, E. D. Kepner Oil Co. 2
Rounds, N. V. V. Franchot mgr. trust 20
Rounds, J. W. Kaufman estate...pressure
Rounds, J. W. Kaufman estate...pressure
Fee, D. J. Moody 2
Fee, D. J. Moody 4
Fee, L. G. Schenfield 5
Fee, C. E. Potter 3
Duke, Penn Petroleum Co. 2
Borden, A. Williams 1
Fee, A. L. & L. M. Lilly 2
Middaugh, A. L. & L. M. Lilly..... 10
Duke & Taggart, Ray Juetter et al.... 1
Barton, P. E. Kahle ..... gas
Given & Barry, Barry estate..... 4
Elder, S. H. Elder & Co. 4
Wright, Wright & Johnson 1
Bingham, H. E. Kemp estate 4
Bingham, H. E. Kemp estate 2
Duke, M. L. Boyle et al ..... pressure
Bingham 329, Andrus & MacDowell 127 ..... pressure
Bingham 371, Lane No. 1 et al 63.... 1
Bingham 411, R. M. & J. George 40.... 2
Forest Oil Corp. 1
Forest Oil Corp. 1
Forest Oil Corp. ..... pressure
Forest Oil Corp. ..... pressure
Forest Oil Corp. ..... pressure
Forest Petroleum Co. 1
Forest Petroleum Co. 1
Forest Petroleum Co. 1
Forest Petroleum Co. 1
Forest Petroleum Co. 1
Forest Petroleum Co. 1
Forest Petroleum Co. ..... pressure
Hawkins Oil Corp. 1
Hawkins Oil Corp. ..... pressure
Niagara Oil Corp., 35 completions.... 35
Niagara Oil Corp., 32 water wells..pressure
Lawton, Niagara Oil Corp. ..... pressure
Lawton, Niagara Oil Corp. 25
Bingham 212, South Penn Oil..... 2
Bingham 387, South Penn Oil..... 1
Bradford Production Co. W. Weston Jr. ..... pressure
Bradford Production Co. W. Weston Jr. ..... pressure
Bradford Producing Co. W. Weston Jr. 1
Bradford Producing Co. W. Weston Jr. 1
Bradford Producing Co. W. Weston Jr. 1
South Penn Oil, W. H. Rounds..... 9
South Penn Oil Co., Keating et al..... 1
South Penn Oil Co., W. Weston Jr..... 1
Redfield, South Penn Oil 5
Fee, Mary C Reidy 2
Fee, R. O. Landers et al 3
Fee, Healey Petroleum Corp. 2
Fee, Healey Petroleum Corp. 2
Fee, Healey Petroleum Corp. 2
Fee, Healey Petroleum Corp. 2
Fee, Healey Petroleum Corp. 2
Hyde, Healey Petroleum Corp. 2
Fee, Healey Petroleum Corp. 3
Fee, Healey Petroleum Corp. 2
Kinley Oil Co., Pure Penn Oil Co..... 3
Fee, J. A. Walters estate 2
Taylor, South Penn Oil Co. ..... oil
Taylor, South Penn Oil Co. ..... oil
Fee, South Penn Oil Co. 1
Fee, South Penn Oil Co. 1
Fee, South Penn Oil Co. ..... pressure
Quintuple, Mrs. Ione D. Miller et al.... 1
Fee, Hawkins Oil Corp. ..... pressure
Fee, Bucher & Moody ..... oil
Fee, Burdick Bros. 5
Fee, E. M. Park estate 4
Fee, T. H. Givans 30
Bingham, D. T. Andrus ..... pressure
Norton, Stiver & Schorman 10
Bingham 453, South Penn Oil 2
Fee, South Penn Oil 1
Fee, South Penn Oil 1
Northwestern Mining, South Penn Oil.. 5
Fee, South Penn Oil 2
Bingham 568, A. B. Sollins ..... pressure
Bingham, 533, South Penn Oil 5
Bingham 539, South Penn Oil 1
Bingham 533, South Penn Oil..... 10
Kinzua, South Penn Oil 15
Kinzua, South Penn Oil 10
Kinzua, South Penn Oil 2
Bingham 186, Hazelwood Oil Co. 2
Fee, Hazelwood Oil Co. 1
Tract 1, Hazelwood Oil Co. 1
Kinley Oil Co., H. J. Walter 2
Melvin, South Penn Oil Co. ..... oil
Whippe, South Penn Oil Co. ..... oil
Newman, Healey Petroleum Corp..... oil
Bingham, South Penn Oil 3
Bingham 499, South Penn Oil 1
Bingham 472, Grant and Mohan..... 5
Bingham 593, Associated Producers Co. 1
Bingham 593, P. A. Oakes & Sons 5
Bingham 577, Alma B. Collins..... 2
Bingham 576, South Penn Oil 3
Daniels, Bradford Producing Co., Inc. 4
Bucher, Sloan & Zook ..... pressure
Mitchell, Bradford Producing Co., Inc. 2
Jones, South Penn Oil 2
Willets, Sloan & Zook 3
Smedley- Town-Melvin ..... pressure
Fee, Simpson, Cooper Oil Co. ..... pressure
Quintuple, Healey Petroleum Corp. .... oil
Fee, Healey Petroleum Corp ..... oil
Tibbits, Minard Run Oil Co. ..... oil
Quintuple, W. C. Kennedy Co. ..... oil
Stoddard, Minard Run Oil Co. ..... oil
Morris, H. L. Morris ..... oil
Bingham, Walker Bros. 3
Bingham, Gibson Oil Co. 2
Rew & Hodge, South Penn Oil 5
Fee, Robert Roy 4
Martin, Bryner & Martin 5
Dieter, Dieter Bros. 2
Bovaird & Canan, A. E. Booth....pressure
Haven, Pringle & Korner .....pressure
Quintuple Oil Co., McKean Producing Co. ..... oil
Ross, Hilliard & Onofrio ..... oil
Quintuple Oil Co., W. M. Howard..... oil
Quintuple Oil Co., W. C. Kennedy Co... oil
Lamprey, Robert Russell 5
Fee, Blaisdell Oil Co. 2

Wells completed 297
Production 426
Pressure 86
Gas 1

95 completions with 52 barrels production received too late to be included in January report.

SOUTHEAST OHIO
WELLS COMPLETED
MONROE COUNTY

Treadway, Henry Oil Co. 2..... dry

PERRY COUNTY

Wright, The Wehrle Co. 2..... dry
Mettzer, Elder & Co. 1..... dry
Saffle, Preston Oil Co. 2..... 20
Moore, O. F. G. Co. 2..... gas
Cosgrave, O. F. G. Co. 1..... 4
Brown, McClay Bros. & Co. 3..... 95
Brown, McClay Bros. & Co. 4..... 20
Brown, McClay Bros. & Co. 5..... 200
Melick, McClay Bros. & Co. 1..... 50
Calhoun-Gordon, McClay Bros. & Co. 1 10
McDonald, Crowley, Carr & Co. 1..... 155
Ramsbottom, Cline & Co. 2 155
Ramsbottom, Cline & Co. 3..... 75
Arnold, The Wehrle Co. 1..... 20
Spring, Walsmith & Watson 1..... dry
Tukesberry, Adair, Lynch & Co. 1..... 25
Moore, Northern Dev. & Co. 1..... 5
McDaniels & Co., Twin State O. & G. Co. 1 60

HOCKING COUNTY

Meldrim, Gordon Oil Co. 2..... dry
Sunday C'k C. Co., Preston Oil Co. 1,377 25
Mender, Hocking Valley Drilling Co. 1. 5

GUERNSEY COUNTY

Wilson, O. F. G. Co. 2..... 50
Shearer, Gordon Oil Co. 2..... 100
Falson, The Capitol Drilling Co. 1.... gas

MUSKINGUM COUNTY

Treahey, Wittmer O. & G. Properties 1 gas
Hicks, Preston Oil Co. 2..... gas
Smith, Preston Oil Co. 1..... 1
McKee, Pure Oil Co. 1..... 150
Sidle, Hopewell F. O. & G. Co. 1..... 380

HOLMES COUNTY

Busy, E. O. G. Co. 1..... gas
Pretzin, O. F. Co. 1..... dry
Aikens, Ohio Oil Co. 1..... dry
Osborne, Carpenter & Co. 2..... 1
Carpenter & Co., O. F. G. Co. 1..... 40

LICKING COUNTY

Davidson, Preston Oil Co. 1..... 220
Shoemaker, Pure Oil Co. 5..... 40
Settles, Hope C. & R. Co. 4..... 2

COSHOCTON COUNTY

Moore & Co., Pure Oil Co. 6..... 10

KNOX COUNTY

Crider, Pure Oil Co. 1..... dry
Mavis, Pure Oil Co. 2..... 10

MORGAN COUNTY

Allen, Bode & Co. 1..... 2

ATHENS COUNTY

Nelson, Co-operative Oil Co. 1..... 2
Alexander, Townsend & Co. 9..... 6
Vanvorhees, Goss & Feaubault 1..... 55

MEIGS COUNTY

Holter, Twenty-Five Assn. Inc. 2..... dry
Potts, Southeastern Ohio Pet. Co. 1.... gas
Arnett & Co., Delbert Bachelor 1..... dry

WASHINGTON COUNTY

Leasure, Turney & Co. 8..... 1
Ellis, Hickson & Co. 8..... 1
Hall, Jos. Hall 1..... 1
Felter, Hall & Co. 1..... dry
Ward, Herlan, Schramm & Co. 14..... dry

HARRISON COUNTY

Hillegas, Geo. A. Hillegas 1..... 1

BELMONT COUNTY

Kenny, Payne & Co. 1..... 3

Completed 55
Production 2000
Dry 12
Gas 5

SOUTHWEST PENNSYLVANIA
WELLS COMPLETED
WASHINGTON COUNTY

Stollar, N. G. Co. of W. Va. 1..... 10
McKeen, N. G. Co. of W. Va. 2..... 2
McPeak, Kauffman & Co. 1..... 15

ALLEGHENY COUNTY

Megi, Phillips G. & O. Co. 1..... gas
Stewart, McCurdy O. & G. Co. 1..... gas
Alstrome, Mars Production Co. 2..... dry
Altmer, Beeler & McEvoy 1..... dry
Deitz, Beeler & McEvoy 1..... 1
Eckart, Harbison & Co. 1..... 3
Dally, Bell, Goss & Co. 2..... 4

BEAVER COUNTY

Davidson, J. L. Abrams 1..... dry
Rossomme, Leapold Rossomme 5..... 1

GREENE COUNTY

Johnson, Peoples N. Gas Co. 1..... gas
Smith, Equitable Gas Co. 1..... gas
Church, Equitable Gas Co. 1..... gas
Titus, Greensboro Gas Co. 1..... dry
McCullough, Mfrs. L. & H. Co. 1..... gas
Phillips, Waynesburg Product Co. 5.... gas
Lewis Hrs., Nuss & Co. 1..... dry
Rinehart, Peoples N. Gas Co. 1..... gas

Completed 20
Production 36
Dry 5
Gas 8

WEST VIRGINIA
WELLS COMPLETED
HARRISON COUNTY

Lyons, Skeleton O. & G. Co. 2..... 5
Flannagan, Jacobs O. & G. Co. 1..... 1
Pitt, Reserve Gas Co. 2..... dry

MARION COUNTY

Michael, Owens B. & M. Co. 1..... gas

MARSHALL COUNTY

Marshall Co. Bank, Mfrs. L. & H. Co. 12 ..... gas
Main, Mfrs. L. & H. Co. 2..... 5
Chambers, Mfrs. L. & H. Co. 3..... gas

WETZEL AND TYLER COUNTIES

Stewart, Stewart O. & G. Co. 1..... gas

DODDRIDGE COUNTY

Maxwell, Columbia Carbon Co. 56..... gas

RITCHIE COUNTY

Darnell, Fox O. & G. Co. 2..... dry
Cunningham, Devitt & Duval 1..... dry
Pigott, Hope C. & R. Co. 4..... 10
Fay Hrs., So. P. O. Co. 1..... 2
Hall Hrs., B. C. Deem 4..... gas
Childers, Rexroad & Co. 1..... gas
Bickerstaff, So. P. O. Co. 10..... gas

GILMER COUNTY

Gribble, Hope C. & R. Co. 3..... 4
Simmons, Hope C. & R. Co. 3..... 12
Snyder, C. M. Bennett & Co. 2..... gas
Young, Carnegie Gas Co. 1..... dry
Snyder, Trainer O. & G. Co. 1..... dry
Burton, Carnegie Gas Co. 3..... gas
Baker, McCall Drilling Co. 1..... gas

CLAY COUNTY

Phillips, So. P. O. Co. 1..... 12
Connell Hrs., Chalmer O. & G. Co. 5... 3

WOOD COUNTY

Henderson, Day Run Oil Co. 4..... dry
Heckart, Alleman & Co. 2..... gas

PLEASANTS COUNTY

Griffith, White & Co. 2..... dry
Lawrence, Pickens & Co. 1..... dry
Cook, Tait Bros. & Co. 20..... dry

ROANE COUNTY

Enochs, Heck Oil Co. 3..... 80
Enochs, Heck Oil Co. 6..... 150
H. F. Enoch, Hope C. & R. Co. 3..... 80

Vandal, Hope C. & R. Co. 3..... 10
Nichols, Hope C. & R. Co. 1..... gas
Harless, U. F. G. Co. 1..... gas
Ferrell, Knopp & Co. 1..... gas

CALHOUN COUNTY

Barr, Hope C. & R. Co. 3..... 5
Stumpe, Hope C. & R. Co. 1..... 2
Linger, So. E. Gas Co. 1..... gas
Hamilton, Young & Co. 2..... 5
Proudfoot, V. G. & O. Co. 3..... 10
Johnson, Hope Gas Co. 1..... gas

LINCOLN COUNTY

Dotson, U. F. G. Co. 3,908..... gas
Horse C'K L. & M. Co., U. F. G. Co. 3,881..... gas
Horse C'k L. & M. Co., U. F. G. Co. 2,562..... gas
Lincoln Land Co., Guyan Oil Co. 54.... 5

KANAWHA COUNTY

Numa Black Coal Co. U. F. G. Co. 3,966..... gas

JACKSON COUNTY

McCarty, So. P. O. Co. 4..... dry
Gray, Capitol Oil Co. 1..... 5
Wade, Field Gas Corp. 2..... dry

BOONE COUNTY

P. R. & P. tract, Pure Oil Co. 32..... gas
P. R. & P. tract A., Pure Oil Co. 38.... 10
Federal Coal Co. Pure Oil Co. 42..... gas
Federal Coal Co. G. L. Cabot 34..... gas
Numa Black Coal Co. U. F. G. Co. 3,966..... gas
Hatfield, Owens B. & M. Co. 3..... gas
Cannelton C. Co. Cannelton C. Co. 2.... gas
Crane, Pond Fork O. & G. Co. 9..... gas

CABELL COUNTY

H. Hatfield, Harshbarger O. & G. Co. 1 gas
Stone, Larner Gas Co. 87..... gas
Beckett, Hamilton Gas Co. 6..... gas

MINGO COUNTY

Red Jacket C. Co., Red Jacket C. Co. 11 gas
Red Jacket C. Co., Red Jacket C. Co. 12 gas
Lawrence Fuel Co., E. J. Evans 1..... gas
Cowden-Workman F. H. Yates 8..... gas

Completed 65
Production 406
Dry 8
Gas 35

CENTRAL OHIO

CENTRAL OHIO FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Ashland	13	31	7	2	6	16	22
Medina	0	0	0	0	1	6	7
Lorain	2	0	1	1	1	8	9
Wayne	5	0	1	4	1	7	8
Holmes	1	0	0	1	3	9	12
Ashtabula	0	0	0	0	0	4	4
Richland	0	0	0	0	0	5	5
Knox	5	0	1	4	2	7	9
Coshocton	4	55	0	2	3	2	5
Summitt	5	0	1	4	1	17	18
Licking	6	363	0	0	11	10	21
Muskingum	14	982	5	2	11	27	38
Athens	7	4	2	4	8	11	19
Meigs	4	0	3	1	3	8	11
Jackson	0	0	0	0	4	6	10
Vinton	1	2	0	0	6	2	8
Lawrence	0	0	0	0	3	0	3
Lake	1	0	1	0	0	0	0
Morrow	0	0	0	0	0	1	1
Tuscarawas	4	0	0	4	2	5	7
Trumbull	1	0	1	0	0	0	0
Stark	2	0	2	0	1	11	12
Fairfield	0	0	0	0	1	3	4
Guernsey	4	45	1	2	6	6	12
Belmont	2	3	0	1	0	5	5
Gallia	0	0	0	0	0	1	1
Harrison	1	2	0	0	0	0	0
Total Feb.	82	1,488	26	32	74	177	251
Total Jan.	94	879	25	39	75	175	250
Difference	-12	609	1	7	1	2	1

WELLS COMPLETED

ASHLAND COUNTY

Greene—J. F. Darrow, Ohio Fuel Gas 1-4,929..... dry
Orange—J. R. Miller, Ohio Fuel Gas 1-4,918..... dry
Al Ott, Ohio Fuel Gas 1-4,974..... gas
Lake—Geo. Horn, John Neading & Co. 1..... 1
Mohican—J. J. Winbigler, Jones & Co. 7..... dry
Geo. W. Garst, The Kemrow Co. 5.... dry
Jas. McFadden, Robinson & Co. 5.... 14
Montgomery—M. H. Moor, Hulse & Kundtz 1..... dry
Wayne Wile, Fetter & Co. 1..... dry
J. L. Smith, The Kemrow Co. 1..... gas
Perry—M. W. Wheeler, Crownshield & Co. 2..... 10
Vermillion—John S. Moffitt, Robinson & Co. 2..... 6
T. B. Stauffer, M. & S. Burtner 1.... dry

Wells completed 13
Production 31
Dry 7
Gas 2

LORAIN COUNTY

Grafton—John Kolika, Ohio Fuel Gas 1-4,928..... dry
Carlisle—J. D. Diedrick, Ohio Fuel Gas 1-4,949..... gas

Wells completed 2
Dry 1
Gas 1

WAYNE COUNTY

Congress—Guy C. Boldman, Ohio Fuel Gas 1-4,876..... dry
E. & W. White, Barnhart & Co. 1.. gas
Chester—C. E. Wearhy, Ohio Fuel Gas 1-4,982..... gas
C. P. Buckholtz, Harmon & George 3 gas
E. L. Donaldson, Faulkner & Co. 3.. gas

Wells completed 5
Dry 1
Gas 4

HOLMES COUNTY

Monroe—A. R. Mackey, Lydic Oil & Gas 7..... gas

KNOX COUNTY

Brown—Herb Frank, Ohio Fuel Gas 2-4,934..... gas
B. B. Workman, Ohio Fuel Gas 3-4,920..... gas
Albert J. Richert, Ohio Fuel Gas 6-4,927..... dry
J. Thrasher, East Ohio Gas 2..... gas
Phil Bross, Upham Gas 1..... gas

Wells completed 5
Dry 1
Gas 4

COSHOCTON COUNTY

Clark—Otto Aikin, The Ohio Oil 2.... gas
J. W. Patterson, Carpenter, Conklin & Co. 1..... 5
Crawford—Les Pretzeno, Ohio Fuel Gas 1-4,788..... gas
Pike—F. A. Hoover, The Pure Oil 6.... 50

Wells completed 4
Production 55
Gas 2

LICKING COUNTY

Falsburg—W. Donaldson, Ohio Fuel Gas 1-4,965..... 220
Perry—J. C. Wright, Hope Construction & Refg. 6..... 4
Hanover—R. L. Sheemaker, The Pure Oil 3..... 44
Homer C. Priest, The Pure Oil 4.... 87
A. A. Strasel, Hope Construction & Refg. 1..... 5
A. & J. Settle, Hope Construction & Refg. 1..... 3

Wells completed 6
Production 363

SUMMITT COUNTY

Franklin—W. C. Kepler, Kime & Co. 1 gas
W. C. Kepler, Pfeifer & Co. 2..... dry
Greene—Shook-Wagoner, F. A. Brendall & Co. 1..... gas
Crouse, G. W. Crouse 5..... gas
O. H. Greenho, Lighton & Co. 1..... gas

Wells completed 5
Dry 1
Gas 4

MUSKINGUM COUNTY

Washington—N. F. Swank, The Atha Co. 1..... dry
Falls—Ed. Swigart, Ohio Fuel Gas 1-4,963..... dry
Ed. D. Walker, Athey Drilling 3.... dry
W. H. Athey, Athey Drilling 1..... dry
Hopewell—J. M. Sidle, Heisey Gas 2.. 375
Clay—Geo. McDonald, Crawley & Co. 1 175
Ramsbottom, Wm. Kline & Co. 2.... 150
Ramsbottom, Wm. Kline & Co. 3.... 75
H. Tewksbury, Wehrle Gas Co. 1.... 27
H. Tewksbury, Craig, Adair & Co. 2.. 30
Jackson—Lloyd McKee, The Pure Oil 4 150
Perry—John Hicks, Ohio Fuel Gas 2-4,951..... gas
T. Treahy, Wittmer Properties Trus. 1..... gas
Newton—Geo. Spring, Wm. Kline & Co. 1 dry

Wells completed 14
Production 982
Dry 5
Gas 2

ATHENS COUNTY

Ames—Edgar L. Jones, Ohio Fuel Gas 1-4,922..... gas
Berne—H. H. Henry, Ohio Fuel Gas 1-4,970..... gas
Athens—Nellie Van Vorhees, Gross & Frebault 1..... dry
Dover—Millfield Coal, Kachelmacher Estate 1..... dry
Carthage—F. J. Caldwell, Ohio Fuel Gas 2-5,004..... gas
Rome—Mary E. Frost, Coolville Oil & Gas 1..... gas
Alexander—Isaac Castle, Townsite Oil & Gas 7..... 4

Wells completed 7
Production 4
Dry 2
Gas 4

MEIGS COUNTY

Sutton—L. Holter, Tyree & Co. 2..... dry
Stanley Holter, Tyree & Co. 3..... dry
Henry Potts, Southern Ohio Petroleum 1..... gas
J. & N. Arnett, Bachelor & Delbert 1 dry

Wells completed 4
Dry 3
Gas 1

VINTON COUNTY

Knox—Robt. Nelson, Co-operative Oil 1 3

LAKE COUNTY

Willoughby—J. Sherwin, John Sherwin 1 dry

TUSCARAWAS COUNTY

Oxford—Ellen M. Couts, Phillips & Co. 1 gas
J. C. Davis, Ohio Fuel Gas 1-4,912.... gas
Washington—C. & M. Poulson, The Capital Drilling 1..... gas
T. & R. Shearer, Gordon Oil 2..... gas

Wells completed 4
Gas 4

TRUMBULL COUNTY

Mecca—Albert F. Rust, John C. Arthur 2..... dry

STARK COUNTY

Lawrence—Geo. Brickley, Penn Oil & Gas 1..... dry
Peter Kalesar, Norwood Johnson 1... dry

Wells completed 2
Dry 2

GUERNSEY COUNTY

Wheeling—Simon Umstaft, Ohio Fuel Gas 1-4,911..... gas
C. C. Wilson, Ohio Fuel Gas 2-4,923.. 45
Millwood—A. Lubonarich, The Kemrow Co. 1..... dry
Adams—Chas. A. Tompkins, Geo. McLaughlin 2..... gas

Wells completed 4
Production 45
Dry 1
Gas 2

BELMONT COUNTY

Wayne—Grimes, J. E. Grimes & Co. 3.. gas
Sam Kinney, S. Kinney & Co. 2..... 3

Wells completed 2
Production 3
Gas 1

HARRISON COUNTY

Short Creek—Hillegas, Geo. A. Hillegas 1..... 2

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Wood	1	5	0	0	0	1	1
Hancock	2	60	0	0	0	6	6
Allen	1	15	0	0	0	2	2
Auglaize	1	0	1	0	1	1	2
Sandusky	0	0	0	0	1	0	1
Mercer	0	0	0	0	0	1	1
Seneca	6	80	2	3	0	11	11
Lucas	0	0	0	0	0	1	1
Ottawa	1	6	0	0	0	0	0
Shelby	0	0	0	0	0	2	2
Wyandot	0	0	0	0	1	0	1
Crawford	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Huron	0	0	0	0	0	2	2
Henry	1	30	0	0	0	0	0
Hardin	0	0	0	0	1	0	1
Total Feb.	13	196	3	3	4	29	33
Total Jan.	13	130	4	2	3	29	32
Difference	0	66	1	1	1	0	1

WELLS COMPLETED

WOOD COUNTY

Liberty—F. W. Stratton, C. V. Darrow 6 5
Freedom—A. D. Rees, The Ohio Oil 5 abd
Plain—Irvin M. Hower, Murray A. Chidester 3..... abd
Troy—Hill & Linke, D. J. Klingman, 2, 3..... abd

Wells completed 1
Production 5
Abandoned 4

HANCOCK COUNTY

Liberty—Joe Ernst, Keiser Oil 3..... 25
Eagle—Frank Freed, R. T. Rittenhouse 8..... 35

Wells completed 2
Production 60

ALLEN COUNTY

Bath—Chas. M. Daubler, H. F. Kelley & Co. 2..... 15

AUGLAIZE COUNTY

Wayne—Harrison-Goddard, Abbott Bros. 1..... dry

SANDUSKY COUNTY

Woodville—Caleb Clink, The Ohio Oil 7 abd
H. Gerke, The Ohio Oil 1, 2, 3, 6.... abd
Madison—Henry Iches, The Ohio Oil 3 abd

Abandoned 6

SENECA COUNTY

Liberty—Sam Hull, McPherson & Co. 1 dry
Jackson—John Stahl, A. B. Strouse & Co. 1..... gas
Pleasants—C. J. Fry, J. H. Murphy & Sons, 1..... gas
Ida M. Rosenberger, W. J. Poyser & Co. 4..... 80
John Beck, Pfeister & Co. 1..... dry
Albert Abbott, Hulse & Co. 1..... gas

Wells completed 6
Production 80
Dry 2
Gas 3

OTTAWA COUNTY

Harris—Carl Blossey, T. F. Lewis & Co. 3..... 6

HENRY COUNTY

Damascus—T. U. McClure, Beaver Creek Oil 1..... 30

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Crawford	2	15	1	0	2	4	6
Lawrence	0	0	0	0	0	4	4
Wabash	0	0	0	0	0	4	4
Clinton	0	0	0	0	0	2	2
Effingham	0	0	0	0	0	1	1
Randolph	0	0	0	0	0	2	2
Madison	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	4	4
St. Clair	7	205	3	0	0	20	20
Total Feb.	9	220	4	0	2	42	44
Total Jan.	25	390	7	0	3	39	42
Difference	-16	170	3	0	1	3	2

COMPLETED WELLS

CRAWFORD COUNTY

Prairie—G. G. Granby, Porterville Oil 2 15
A. J. Ikemire, Arkansas Fuel Oil 2.. dry

Wells completed 2
Production 5
Dry 1

LAWRENCE COUNTY

Dennison—A. B. Buchannan, The Ohio Oil 20..... abd

WABASH COUNTY

Wabash—Winnie Sparks, Jose. S. Young Jr. & Co. 3..... abd

ST. CLAIR COUNTY

Sugar Loaf—Matilda Dyroff, The Ohio Oil 24..... 105
Phillip Frye, The Ohio Oil 4..... 30
Wallie Hrs., The Ohio Oil 1..... dry
Fred Metler, St. Clair County Oil & Gas 2..... 35
Fred Eckert, St. Clair County Oil & Gas 1..... 35
Fauerbacher, Joseph May, 1..... dry
Minnie Hoffstetter, Haver & Taft 1.. dry
Chas. H. LaCroix, Jas. C. Ellis & Co. 1..... abd
A. Shock, Thos. Whelan 1..... abd

Wells completed 7
Production 205
Dry 3
Abandoned 2

MISSOURI

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Dig.	Ttl.
St. Louis	0	0	0	0	2	2

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Muskegon	5	50	1	2	3	2	5
Isabella	9	900	3	1	22	41	63
Midland	8	1,593	0	0	3	16	19
Kent	0	0	0	0	2	2	4
Ottawa	0	0	0	0	0	2	2
Oceana	0	0	0	0	0	7	7
Mason	0	0	0	0	0	4	4
Manistee	0	0	0	0	0	3	3
Lake	0	0	0	0	0	4	4
Newyago	0	0	0	0	2	9	11
Cass	0	0	0	0	1	4	5
Tuscola	0	0	0	0	0	1	1
Clare	0	0	0	0	4	3	7
Alpena	1	0	1	0	0	1	1
Montcalm	1	0	1	0	0	1	1
Saginaw	0	0	0	0	0	2	2
Emmett	0	0	0	0	0	1	1
Delta	0	0	0	0	0	1	1
Kalkaska	0	0	0	0	1	2	3
Branch	0	0	0	0	0	1	1
Barren	0	0	0	0	0	1	1
Ingham	1	0	1	0	0	0	1
Iosco	0	0	0	0	2	0	2
Missaukee	0	0	0	0	1	0	1
Eaton	0	0	0	0	0	1	1
Montmorency	0	0	0	0	1	0	1
Monroe	1	0	1	0	1	1	2
Gratiot	0	0	0	0	5	5	10
Jackson	0	0	0	0	1	0	1
Kalamazoo	0	0	0	0	0	1	1
Presque Isle	0	0	0	0	1	0	1
Huron	0	0	0	0	1	0	1
Allegan	1	0	1	0	3	0	3
Sanilac	0	0	0	0	1	0	1
Livingston	1	0	1	0	0	0	0
Calhoun	0	0	0	0	1	0	1
Van Buren	0	0	0	0	0	1	1
Total Feb.	28	2,543	10	3	56	117	173
Total Jan.	23	4,955	5	0	52	122	174
Difference	5	2,412	5	3	4	6	1

WELLS COMPLETED

MUSKEGON COUNTY

Muskegon—John B. Nichols, Wego Oil 2..... gas
Chas. Reeths, Dixie Oil A-2..... gas
City of Muskegon, Continental Oil & Gas 20..... 30
E. Bragg, Laurel Oil & Gas 1..... dry
Laketon—A. H. Fenner, Witt & Dyant 8..... 20

Wells completed 5
Production 50
Dry 1
Gas 2

ISABELLA COUNTY

Chippewa—W. D. Gibson, The Pure Oil 5..... 80
Lafayette Conrad, Spigel Oil & Gas 1 dry
W. H. Coates, Dixie Oil 1..... 288
McClintic, Leonard Oil & Gas 7..... 252
J. Coon, Stork Oil 5..... 180
Denver—Sarah Cashen, Wittmer Oil & Gas 1..... 100
Quincy Hughes, New York Pet Gas 1 dry
Broomfield—Mitchell, Isabella Development 1..... gas
Wise—E. Walker, St. Clair Oil & Gas 1 dry

Wells completed 9
Production 900
Dry 3
Gas 1

MIDLAND COUNTY

Greendale—J. M. Coats, The Pure Oil 1 200
State-Midland, The Pure Oil A-2.... 200
State-Midland, The Pure Oil B-2.... 200
A. N. Ward, The Pure Oil 1..... 175
A. N. Ward, The Pure Oil 2..... 450
S. O. Vinton, The Pure Oil 1..... 308
Carter, The Pure Oil 2..... 30
Geneva—Geo. Buck, Midland Oil Dev. 1 30

Wells completed 8
Production 1593

MONTCALM COUNTY

Bushnell—A. Herrick, National Petroleum Corp. 1..... dry

ALPENA COUNTY

Long Rapids—Thos. Wilson, The Exploration Co. 1..... dry

INGHAM COUNTY

Lock—Potter, Hillmur Oil 1..... dry

MONROE COUNTY

Dundee—Hunley, Irene Cilley & Co. 1.. dry

LIVINGSTON COUNTY

Howell—T. F. Crandall, P. A. Meyers & Co. 1..... dry

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Adams	0	0	0	0	0	2	2
Gibson	2	9	2	0	1	5	6
Pike	3	257	0	1	1	6	7
Daviess	0	0	0	0	0	1	1
Sullivan	0	0	0	0	0	1	1
Vigo	0	0	0	0	1	4	5
Spencer	3	0	3	0	0	3	3

TANK CARS

Long or short term Lease

Thousands of cars—various capacities—all modern and conditioned. Rental periods of one trip to ten years. *Write for details.*

NORTH AMERICAN CAR CORPORATION
Executive Offices:
Chicago, Ill.

ARTHUR C. BROWN
SOLICITOR OF UNITED STATES AND FOREIGN PATENTS
412 KENNEDY BLDG.
Tulsa, Okla.
Mr. Fred Krueger
in charge
Phone 4-2319

TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

Chester W. Washburne
Geologist and Engineer
27 William St., N. Y.

S. F. SHAW
Mining Engineer
Consulting Work in Air and Gas Lifts
1324 South Boulder St.,
Tulsa, Okla.

PATENTS *Write for Free Book*
MUNN & CO.
Associated since 1846 with the Scientific American
514 Scientific American Bldg., *Washington, D. C.*
1551 Scientific American Building
24 West 40th Street, *New York City*
1303 Tower Building, *Chicago, Ill.*
656 Hobart Building, *San Francisco, Calif.*
511 Van Nuys Bldg., *Los Angeles, Calif.*

How About Next Week?

Be sure that you will get your Oil and Gas Journal every week by renewing your subscription promptly.

The Oil and Gas Journal
TULSA, OKLA.

Warrick	0	0	0	0	0	2	2
Perry	1	0	0	1	0	5	5
Fountain	1	0	1	0	0	0	0
Greene	1	0	1	0	0	1	1
Crawford	0	0	0	0	0	1	1
Lagrange	0	0	0	0	0	1	1
Posey	0	0	0	0	1	1	2
Johnson	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Morgan	0	0	0	0	0	1	1
Marshall	0	0	0	0	1	1	2
Monroe	0	0	0	0	1	2	3
Lake	0	0	0	0	0	1	1
White	0	0	0	0	0	1	1
Total Feb.	11	357	7	2	6	41	47
Total Jan.	17	114	2	8	3	39	42
Difference	6	143	5	6	3	2	5

WELLS COMPLETED

JAY COUNTY

Penn—L. Grissell, Amber Oil Producing 30, 33, 34 ..... abd
G. F. Gemmill, Penville Oil & Gas 6, 7, 8, 11 ..... abd
Knox—L. Horn, Turkey Creek Oil 1, 2, 3, 4, 5 ..... abd
Abandoned 12

GIBSON COUNTY

Center—Sam Mitchell, Indiana Oil & Gas Corp. 2 ..... dry
Barton—Ben Buck, Indiana Oil & Gas Corp. 1 ..... dry
Washington—W. C. Deffendall, The Ohio Oil 4 ..... abd
Wells completed 2
Dry 2
Abandoned 1

PIKE COUNTY

Clay—Mary McAtee, C. C. Taliaferro Jr. 3 225
Ford-Hill, Mahutska Oil & Co. 2 32
Chas. McAtee, Roger A. Lee & Co. 2 gas
Wells completed 3
Production 257
Gas 1

SPENCER COUNTY

Harrison—Ernest Bauer, Eckley & Bettinger 1 ..... dry
Huff—Irvin Mounier, Williams & Co. 1. dry
Haynes, E. M. Treat Co. 1 ..... dry
Wells completed 3
Dry 3

PERRY COUNTY

Clark—Frank Delaissa, J. H. McClurkin & Co. 1 ..... gas

FOUNTAIN COUNTY

Troy—W. B. Coffing, Bowman Oil & Gas 1 ..... dry

GREENE COUNTY

Goose Bend Area—Ogles, Keystone Oil 1 ..... dry

LARGER SUPPLY OF ASPHALT

NEW YORK, Mar. 22.—General Asphalt Co., which owns the large asphalt lake on Trinidad Island, has apparently tapped a constant subsurface source of supply at this property, it is reported. Although engineers of the company have removed asphalt equivalent to a 20-foot drop in the lake's surface, the asphalt lake has shown but an 8-inch drop during this period. Output of the Trinidad Lake is handled at the company's refineries at Trinidad and at Maurer, N. J., on tidewater.

MRS. CHARLES N. HOUGH DEAD

FRANKLIN, Pa., Mar. 22.—Mrs. Kathrine Hagenbuch Hough, president of the Charles N. Hough Manufacturing Co., died at her home in this city after an illness of eight months. Deceased was born in Williamsport, Pa., on October 17, 1868, and was married to Charles N. Hough on June 18, 1880. The Charles N. Hough Manufacturing Co. was established in Franklin in 1901 and Mrs. Hough was active in its management for the past 25 years of her life. She is survived by one son, Charles N. Hough of Franklin, and one daughter, Miss Katherine Hough.

W. S. TRIXHEL DEAD

The death is announced of W. S. Trixhel, 54 years old, for several years head of the land department of the Gulf Refining Co. at Shreveport, La., with which company he had been for the past 15 or 20 years.

UTILITIES LEADER DIES

ABILENE, Tex., Mar. 22.—George W. Fry, president of the West Texas Utilities Co., which operates in 113 communities and 45 counties of West Texas, died here after a long illness. Mr. Fry was 48 years old.

RYERSON

IMMEDIATE SHIPMENT FROM STOCK

Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete, Reinforcing, Rails, Pipe, Turnbuckles, Alloy Steel, Allegheny Metal, Small Tools, Machine Tools, etc.

Write for the Ryerson Journal and Stock List

JOSEPH T. RYERSON & SON INC.

Chicago Detroit | Milwaukee Buffalo | St. Louis Jersey City | Cincinnati Philadelphia | Cleveland Boston

Tulsa Office: 410 Atlas Life Bldg.

STEEL

Houston Office: D. S. Mair 505 Esperson Bldg.

Ross-Meehan Foundries

Manufacturers—

RIVER CLAMPS a Specialty

Williamson Multispeed Winch for Oil Fields
Williamson Drum Units
Electric Steel Castings, Electrically Annealed
"Certified" Malleable Iron Castings
"Meehanite Metal" Castings
Gray Iron Castings
Special Analyses Castings for—
Oil Producers and Refiners

Chattanooga, Tennessee, U.S.A.

NATIONAL PETROLEUM ENGINEERING COMPANY
Engineers & Geologists
TULSA, OKLAHOMA

APPRAISALS
REPORTS-COMMERCIAL & TAX

SURVEYS
ESTIMATES OF OIL RESERVES

AN EXPERIENCED OIL FIELD ORGANIZATION

MYERS SELF-OILING POWER PUMPS

Water problems in industrial, commercial and agricultural fields are being solved in thousands and thousands of installations by Myers Self-Oiling Bulldozer Power Pumps and Myers Hand and Power Water Systems. Whatever your requirements may be in the way of hand or power pumps, when you are again in the market for a new pump, write us for catalog and information.

THE F. E. MYERS & BRO. CO. Ashland, Ohio
ASHLAND PUMP AND HAY TOOL WORKS

Many Businesses

have been built by the use of consistent classified advertising. Keep your ad running regularly. The results are accumulative.

Classified Wants Department

The Oil and Gas Journal

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS Pipe Line Statement for January

Runs

Company—	Month (bbls.)	Dly. av. (bbls.)
Prairie P. L. Co.*	4,247,000	137,000
Gulf P. L. Co.	1,684,338	54,338
Texas P. L. Co.	784,220	25,297
Empire P. L. Co.	1,749,845	56,447
Magnolia P. L. Co.	1,925,246	62,105
Cosden P. L. Co.	667,158	21,521
Sinclair P. L. Co.*	3,193,000	103,000
Oklahoma P. L. Co.	3,429,885	110,641
Other lines*	6,395,300	206,300
Total January	24,075,993	776,644
Total December	23,650,520	762,920
Difference	425,473	13,724

Shipments

Prairie P. L. Co.†	6,257,644	201,859
Gulf P. L. Co.	1,955,518	63,081
Texas P. L. Co.	1,151,267	37,138
Empire P. L. Co.	1,373,119	44,294
Magnolia P. L. Co.	2,041,029	65,840
Cosden P. L. Co.	786,124	25,359
Sinclair P. L. Co.†	3,465,366	111,786
Oklahoma P. L. Co.	3,552,327	114,591
Other lines*	6,696,000	216,000
Total January	27,278,394	879,948
Total December	27,079,969	873,546
Difference	198,425	6,402

Stocks

Prairie O. & G. Co.*	40,194,000
Gulf P. L. and Gypsy Oil Co.	9,667,678
The Texas Company	6,658,163
Empire P. L. Co.	6,562,069
Cosden P. L. Co.	3,683,240
Sinclair Crude Oil Pur. Co.	19,678,000
Magnolia Pet. Co.	7,577,975
Oklahoma P. L. Co.	3,554,219
Carter Oil Co.	9,271,431
Other lines*	22,511,000
Total January	129,357,775
Total December	130,257,108
Difference	899,332

*Estimated. †Prairie and Sinclair shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF FEBRUARY

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Indiana and Michigan for January and February:

	Jan. 1930	Feb. 1930
Nat. Transit	439,729.00	366,221.35
S. W. Pa. P. L.	90,898.30	85,041.96
Eureka P. L.	367,547.89	354,681.93
Buckeye P. L. (Macksb'g)	358,430.62	342,776.22
Buckeye P. L. (Cleve.)	10,647.91	9,978.95
Buckeye P. L. (Lima, etc.)	85,676.96	97,135.19
Indiana P. L.	3,482.83	4,149.46
Cumberland P. L.	182,383.51	179,067.13
N. Y. Transit	37,659.17	36,498.53
Tidewater P. L.	24,115.65	25,856.05
Pure Oil	305,214.10	280,894.48
Paragon Dev.	10,541.45	10,332.48
Stoll Oil Ref.	3,899.80	4,016.89
Bradford Tran.	432,916.17	422,524.62
Total	2,353,143.36	2,219,175.24
Daily average	75,907.85	79,256.26

Note—Paragon Refining Co. had other receipts of 135,556.83 bbls. Paragon Development had other receipts of 177.81 bbls. Indian Refining Co. had other receipts of 328,689.28 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan. 1930	Feb. 1930
Nat. Transit	566,559.42	546,268.96
S. W. Pa. P. L.	292,868.36	297,049.02
Eureka P. L.	261,587.25	257,040.33
Buckeye P. L. (Macksb'g)	188,277.50	181,006.51
Buckeye P. L. (Cleve.)	2,188.64	1,711.55
Buckeye P. L. (Lima, etc.)	900,037.30	1,018,919.25
Indiana P. L.	1,549,996.22	1,400,007.24
Cumberland P. L.	238,821.39	107,172.62
Southern P. L.	62,190.22	7,067.18
N. Y. Transit	189,945.65	130,029.94
Northern P. L.	196,645.06	203,652.26
Tidewater P. L.	392,513.08	445,604.24
Pure Oil	270,432.99	238,714.23
Paragon Ref.	157,944.28	137,377.36
Indian Ref.	461,663.58	397,789.25
Paragon Dev.	10,643.37	10,892.51
Bradford Trans.	486,905.56	475,276.19
Tuscarora Oil	517,121.55	426,375.21
Total	6,746,341.69	6,281,953.85
Daily average	217,623.92	224,355.46

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of January and February:

	Jan. 1930	Feb. 1930
Nat. Transit	787,014.24	769,712.92
S. W. Pa. P. L.	511,042.96	517,351.25
Eureka P. L.	1,427,435.53	1,450,357.33
Buckeye P. L. (Macksb'g)	609,936.03	703,523.57
Buckeye P. L. (Cleve.)	85,063.78	66,689.66
Buckeye P. L. (Lima, etc.)	4,764,964.92	5,172,616.79
Indiana P. L.	742,902.49	782,290.66
Cumberland P. L.	470,501.33	548,921.63
Southern P. L.	316,573.11	347,291.82
N. Y. Transit	310,237.52	349,684.13
Northern P. L.	569,978.67	606,100.40
Tidewater P. L.	915,732.49	994,005.84
Pure Oil	64,343.78	114,026.32
Paragon Ref.	29,271.88	27,184.65
Indian Ref.	142,994.08	74,487.14
Paragon Dev.	6,142.46	5,932.46
Tuscarora	266,285.45	265,783.29
Bradford Trans.	199,625.21	195,601.39
Total	12,220,045.93	12,991,561.25
Increase	966,092.47	771,515.39

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1927	1928	1929	1930
Jan.	56,209	52,904	51,749	75,907
Feb.	61,298	57,002	51,833	79,256
Mar.	63,247	57,485	54,252	.....
April	60,927	56,812	58,444	.....
May	60,284	62,067	59,902	.....
June	62,757	58,230	58,833	.....
July	58,674	57,144	66,087	.....
Aug.	60,870	57,745	66,087	.....
Sept.	60,285	53,487	67,315	.....
Oct.	147,080	58,100	76,093	.....
Nov.	57,275	53,865	74,831	.....
Dec.	53,089	52,025	74,561	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1928	1929	1930
Jan.	12,276,710	7,596,564	12,220,045
Feb.	12,180,419	8,738,835	12,991,561
Mar.	12,239,725	9,002,058	.....
April	11,740,125	8,978,172	.....
May	11,602,468	8,903,560	.....
June	11,287,678	8,921,275	.....
July	10,819,331	9,211,595	.....
Aug.	10,236,743	9,440,643	.....
Sept.	9,660,910	9,443,067	.....
Oct.	9,229,709	9,441,101	.....
Nov.	8,366,553	9,868,538	.....
Dec.	7,539,555	11,253,953	.....

Daily Average Shipments

	1927	1928	1929	1930
Jan.	141,227	146,465	165,721	217,623
Feb.	138,534	167,368	159,387	224,355
Mar.	133,777	158,883	161,474	.....
April	140,227	172,935	169,737	.....
May	144,594	180,559	184,281	.....
June	149,772	188,024	185,401	.....
July	151,850	189,470	194,763	.....
Aug.	188,653	192,853	184,946	.....
Sept.	144,213	194,138	201,214	.....
Oct.	147,036	176,000	191,367	.....
Nov.	150,975	176,898	202,743	.....
Dec.	144,504	173,572	186,257	.....

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of January and February showing gross stocks of the above fields:

	Jan. 1930	Feb. 1930
Pennsylvania	3,617,731.86	3,795,555.27
Lima	687,915.50	751,878.16
Kentucky	540,503.40	580,013.89
Mid-Continent	7,267,468.33	7,739,469.19
Illinois	55,156.42	24,274.24
Michigan	51,270.42	100,370.40
Total	12,220,045.93	12,991,561.25

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	2,305,915.75
Runs from wells	522,560.28
Other receipts	93,619.28
Regular deliveries	388,680.54
Other deliveries	328,364.66

The amount of Illinois oil run by the Tidewater Pipe Co. in February was 25,856.65 bbls. Deliveries were 25,856.05 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1930—	Runs	Deliveries
Feb.	548,416.33	414,536.59
1929—		
Feb.	517,320.17	503,387.70
Mar.	728,319.67	586,049.60
April	515,374.27	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,159.44
Aug.	625,351.99	746,425.06
Sept.	582,457.66	669,947.72
Oct.	622,302.83	558,558.68
Nov.	565,108.75	427,064.63
1930—		
Jan.	543,387.95	498,293.93

Tidewater Pipe Co., Ltd., also delivered in February 114,199.07 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
April	16,667	....	32,333	13,233	2,234	64,467	.....	.....	.....	.....	7,333	65,800
May	16,226	2,416	31,326	10,806	2,129	62,903	.....	.....	.....	.....	....	62,903
June	14,866	3,167	23,100	10,300	6,100	57,533	.....	.....	.....	.....	....	57,533
July	15,287	4,806	34,290	19,388	2,452	76,323	.....	.....	.....	.....	4,161	80,484
August	20,389	3,129	35,226	18,903	5,548	83,194	.....	.....	.....	.....	12,161	95,355
September	19,433	....	31,834	11,900	6,200	69,367	.....	.....	.....	.....	4,800	74,167
October	5,585	4,677	42,065	12,000	9,677	77,484	.....	.....	.....	.....	4,097	81,581
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,968	....	46,129	13,613	7,225	79,935	.....	.....	.....	.....	2,335	82,295
January	18,484	1,936	34,257	22,323	9,516	86,516	.....	.....	.....	.....	2,258	88,774

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
April	19,733	18,367	137,233	50,267	22,567	248,167	6,867	25,066	10,367	1,500	43,800	291,967
May	29,806	19,258	138,000	49,936	22,322	259,322	6,677	26,323	3,000	1,323	37,323	296,645
June	21,433	8,667	134,600	42,967	18,300	235,967	8,600	22,633	11,800	2,033	45,066	281,033
July	40,097	15,129	111,677	43,420	31,516	241,839	4,774	12,097	9,516	161	26,548	268,387
August	32,387	14,355	162,644	30,936	20,355	261,677	4,226	12,742	....	1,484	18,452	280,129
September	32,967	9,000	136,633	54,300	32,900	265,800	6,900	22,900	5,367	1,333	36,500	302,300
October	39,936	10,519	137,096	38,160	38,644	264,355	6,613	13,388	11,064	4,419	35,484	299,839
November	23,633	18,900	125,200	41,100	28,200	237,033	2,233	12,533	6,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	23,775	233,678	5,548	16,484	6,613	1,774	30,419	264,097
January	21,161	10,678	134,581	38,677	43,806	248,903	4,322	6,453	....	548	11,323	260,226

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
February:	Month	22,390,707	20,464,164	20,816,209	2,557,968	2,154,194	1,569,930	1,965,656	3,113,000	74,941,828
	Daily average	796,454	730,863	743,484	91,356	76,936	56,068	70,202	111,184	2,676,494
March:	Month	24,324,729	20,838,262	24,358,592	2,951,076	2,303,734	1,756,153	2,195,823	3,586,000	82,314,369
	Daily average	784,669	672,202	785,761	95,196	74,314	56,650	70,838	115,677	2,655,302
April:	Month	23,295,060	20,235,390	23,493,097	3,112,740	2,188,680	1,702,497	2,085,030	3,524,000	79,636,494
	Daily average	776,502	674,513	783,102	103,758	72,956	56,750	69,501	117,467	2,654,550
May:	Month	24,053,351	21,345,453	24,489,101	3,665,099	2,220,158	1,713,261	2,252,522	3,879,000	83,617,945
	Daily average	775,915	688,563	789,965	118,229	71,618	55,267	72,262	125,129	2,697,353
June:	Month	24,624,627	20,561,112	24,698,029	3,636,150	2,112,270	1,699,581	2,180,752	3,887,000	83,399,521
	Daily average	820,821	685,371	823,267	121,205	70,337	56,653	72,692	129,567	2,779,984
July:	Month	26,796,627	22,371,925	26,969,989	3,867,157	2,137,047	1,716,488	2,360,836	4,439,000	90,659,069
	Daily average	864,407	721,675	869,997	124,747	68,937	55,370	76,156	143,200	2,924,486
August:	Month	27,233,353	22,429,522	27,491,362	3,816,555	2,056,083	1,764,973	2,478,016	4,363,000	91,662,864
	Daily average	878,495	723,532	886,818	123,115	67,298	56,934	79,936	140,742	2,956,866
September:	Month	26,104,264	21,299,490	26,067,065	3,780,690	1,959,720	1,718,250	2,347,020	4,075,000	87,351,499
	Daily average	870,142	709,983	868,902	126,023	65,324	57,275	78,234	135,917	2,911,716
October:	Month	26,895,160	20,821,646	26,412,167	3,429,468	2,000,827	1,956,326	2,392,952	4,482,000	88,389,746
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	141,358	2,851,303
November:	Month	21,317,540	19,193,760	24,896,034	3,430,560	1,911,060	1,853,565	2,350,110	4,029,000	78,981,629
	Daily average	710,585	639,798	829,868	114,352	63,702	61,785	78,337	134,300	2,632,720
December:	Month	21,705,554	20,092,876	25,609,823	3,549,066	1,917,071	1,878,352	2,378,754	4,168,100	81,299,596
	Daily average	700,179	648,156	818,394	114,486	61,841	60,592	76,734	134,455	2,623,568
January:	Month	21,983,242	20,802,984	25,284,252	3,273,197	1,817,685	1,780,969	2,151,090	4,216,000	81,309,519
	Daily average	709,137	671,064	815,624	105,587	58,635	57,451	69,390	136,000	2,622,888
Total 12 months		290,634,214	250,456,584	300,585,820	41,069,726	24,807,729	21,110,345	27,138,861	47,761,100	1,003,564,079

GASO PUMPS Are Popular Travelers

At home in all parts of the world . . doing their work dependably and efficiently . . Gaso Pumps are experienced travelers. Their popularity is attested by repeat orders from every country where the oil industry thrives.

Send for catalogs giving detailed specifications of Gaso Pumps for any requirements.

GASO PUMP & BURNER MFG. COMPANY
Tulsa, Okla., U. S. A.
Fort Worth, Texas
New York, N. Y.

GASO PUMPS

for every oil industry need

Each Byron Jackson tool, as produced today, embodies an ideal combination of all improved features previously distributed among several products of similar type. The net result is outstanding performance which insures lower operating costs.

BYRON JACKSON CO.

Established 1872
General Offices: 2150 E. Slauson Ave.,
Los Angeles, Calif.
Tulsa Oklahoma City Houston
Shreveport
New York City

Use a BJ and get a Better Job

A tong for every purpose, each the leader in its class for speed, efficiency and safety.